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Title 43
NATURAL RESOURCES
Part XVII. Office of Conservation—Injection and Mining
Subpart 1. Statewide Order No. 29-N-1

Chapter 1. Class I, III, IV and V Injection Wells

§101. Definitions

A. The following definitions apply to all regulations following hereafter. Terms not defined in this Section have the meaning given by R.S. (1950) Title 30, Section 3.

Abandoned Well a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.

Act Part I, Chapter 1 of Title 30 of the Louisiana Revised Statutes.

Application the filing by a person on the Office of Conservation forms for applying for an underground injection permit, including any additions, revisions or modifications to the forms.

Aquifer a geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

*Area of Revie*w the area surrounding an "injection well" as described in §109.A.2 for Class I and §109.B.2 for Class III.

Casing a metallic or nonmetallic tubing or pipe of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls form caving, to prevent loss of drilling mud into porous ground, or to prevent water, gas or other fluid from entering the hole.

Catastrophic Collapse the sudden and utter failure of overlying *strata* caused by removal of underlying materials.

Cementing the operation whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing.

Cesspool a drywell that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and/or perforated sides.

Confining Bed a body of impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers.

Confining Zone a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone.

Contaminant any physical, chemical, biological, or radiological substance or matter in water.

Commissioner the Assistant Secretary of the Office of Conservation, Department of Natural Resources.

Disposal Well a well used for the disposal of waste into a subsurface stratum.

Drilling Mud heavy suspension used in drilling an injection well introduced down the drill pipe and through the drill bit.

Drywell a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

Effective Date the date that the Louisiana State UIC Program is approved by the Environmental Protection Agency.

Emergency Permit a UIC permit issued in accordance with §115.

Exempted Aquifer an aquifer or its portion that meets the criteria of the definition of underground source of drinking water but which has been exempted according to the procedures set forth in §103.H.

Existing Injection Well or Project an injection well or project other than a new injection well or project.

Experimental Technology a technology which has not been proven feasible under the conditions in which it is being tested.

Facility or Activity any facility or activity, including land or appurtenances thereto, that is subject to these regulations.

Fault a surface or zone of rock fracture along which there has been displacement.

Flow Rate the volume per time unit given to the flow of fluid substance which emerges from an orifice, pump, turbine or passes along a conduit or channel.

Fluid any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas or any other form or state.

Formation a body of rock characterized by a degree of lithologic homogeneity revealingly, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

Formation Fluid fluid present in a formation under natural conditions as opposed to introduced fluids, such as drilling muds.

Generator any person, by site location, whose act or process produces hazardous waste identified or listed in the Louisiana Hazardous Waste Management Program.

Ground Water water below the land surface in a zone of saturation.

Hazardous Waste a hazardous waste as defined in the Louisiana Hazardous Waste Management Program.

Hazardous Waste Management (HWM) Facility all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing or disposing of hazardous waste.

Improved Sinkhole a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings which have been modified by man for the purpose of directing and emplacing fluids into the subsurface.

Injection Well a well into which fluids are being injected other than fluids associated with active drilling operations.

Injection Zone a geological formation, group of formations or part of a formation receiving fluids through a well.

Ionizing Radiation any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter. It includes any or all of the following: alpha rays, beta rays, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles; but not sound or radio waves, or visible, infrared or ultraviolet light.

Lithology the description of rocks on the basis of their physical and chemical characteristics.

Major Facility any Class I or IV hazardous waste injection well facility or activity.

Manifest the shipping document originated and signed by the generator which contains the information required by the Hazardous Waste Management Program.

New Injection Well a well which began injection after the Louisiana Underground Injection Control program is approved and the applicable (Office of Conservation) rules and regulations are promulgated.

Owner or Operator the owner or operator of any facility or activity subject to regulation under the UIC program.

Packer a device lowered into a well to produce a fluid tight seal within the casing.

Permit an authorization, license, or equivalent control document issued by the commissioner to implement the requirements of these regulations. Permit includes, but it is not limited to, area permits and emergency permits. Permit does not include UIC authorization by rule or any permit which has not yet been the subject of final agency action, such as a draft permit.

Person an individual, association, partnership, corporation, municipality, state or federal agency, or an agent or employee thereof.

Plugging the act or process of stopping the flow of water, oil or gas into or out of a formation through a borehole or well penetrating that formation.

Plugging Record a systematic listing of permanent or temporary abandonment of water, oil, gas, test, exploration, and waste injection wells.

Point of Injection the last accessible sampling point prior to waste fluids being released into the subsurface environment through a Class V injection well. For example, the point of injection of a Class V septic system might be the distribution box, the last accessible sampling point before the waste fluids drain into the underlying soils. For a dry well, it is likely to be the well bore itself

Pressure the total load or force per unit area acting on a surface.

Project a group of wells in a single operation.

Public Water System a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves at least 25 individuals. Such term includes:

a. any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and

b. any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system.

Radiation any electromagnetic or ionizing radiation including gamma rays and x-rays, alpha and beta particles, high-speed electrons, neutrons, protons and other nuclear particles; but not sound waves. Unless specifically stated otherwise, these regulations apply only to ionizing radiation.

Radioactive Material any material, whether solid, liquid, or gas, which emits radiation spontaneously.

Radioactive Waste any waste which contains radioactive material for which no use or reuse is intended and which is to be discarded.

RCRA the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (P.L. 94-580 as amended by P.L. 95-609, 42 U.S.C. 6901 et seq.).

Sanitary Waste liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or

multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities provided the waste is not mixed with industrial waste.

Schedule of Compliance a schedule or remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the act and these regulations.

Septic System a well that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

Site the land or water area where any facility or activity is physically located or conducted including adjacent land used in connection with the facility or activity.

Skin Effect the blockage or plugging of the well perforations or near wellbore formation face from solids in the waste stream that results in increased injection pressures and can be measured by accepted engineering test procedures.

Sole or Principal Source Aquifer an aquifer which is the sole or principal drinking water source for an area and which, if contaminated, would create a significant hazard to public health.

State the state of Louisiana.

Stratum (plural *Strata*) a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.

Subsurface Fluid Distribution System an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

Surface Casing the first string of casing to be installed in the well, excluding conductor casing.

Total Dissolved Solids the total dissolved filterable solids as determined by use of the method specified in the 14th edition, pp. 91-92, of *Standard Methods for the Examination of Water and Waste Water*.

UIC the Louisiana State Underground Injection Control Program.

Underground Injection a well injection.

Underground Source of Drinking Water (USDW) an aquifer or its portion:

a. which supplies any public water system; or

b. which contains a sufficient quantity of ground water to supply a public water system; and

i. currently supplies drinking water for human consumption; or

ii. contains fewer than 10,000 mg/1 total dissolved solids; and which is not an exempted aquifer.

USDW Underground Source of Drinking Water.

Well a bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system.

Well Injection the subsurface emplacement of fluids through an injection well.

Well Plug a fluid-tight seal installed in a borehole or well to prevent movement of fluids.

Well Stimulation several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected thus making it possible for wastewater to move more readily into the formation, and includes:

a. surging;

b. jetting;

c. blasting;

d. acidizing; or

e. hydraulic fracturing.

Workover to perform one or more of a variety of remedial operations on an injection well, such as cleaning, perforation, change tubing, deepening, squeezing, plugging back, etc. (see §109.A.8.b).

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:ID and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 8:83 (February 1982), amended LR 12:26 (January 1986), LR 27:1698 (October 2001).

§103. General Provisions

A. Applicability. These rules and regulations apply to all owners and operators of proposed and existing Class I, III, IV, and V injection wells in the State of Louisiana. For Class I wells, these rules shall only apply to nonhazardous waste disposal as described in §103.C.1.b. and c. below. Applicable rules for Class I hazardous waste disposal is in Statewide Order No. 29-N-2 (LAC 43:XVII.Chapter 2).

B. Prohibition of Unauthorized Injection. Any underground injection, except as authorized by a permit or rule, is prohibited after the effective date of these regulations. Construction of any well required to have a permit under these regulations is prohibited until the permit has been issued.

C. Classification of Injection Wells

1. Class I

a. Wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to inject hazardous waste beneath the lowermost formation containing, within 1/4 mile radius of the well bore, an underground source of drinking water.

b. Other industrial and municipal disposal wells which inject fluids beneath the lowermost formation containing an underground source of drinking water within one-fourth mile radius of the well bore.

c. Radioactive waste disposal wells which inject fluids below the lowermost formation containing an underground source of drinking water within one quarter mile of the well bore. This classification of radioactive waste disposal wells does not affect the disposal of naturally occurring radioactive material (NORM) in Class II wells as part of oil and gas exploration and production operations. The injection of wastes associated with oil and natural gas exploration and production, including such wastes containing NORM, are regulated under the appropriate Class II regulations.

2. Class II. Wells which inject fluids:

a. which are brought to the surface in connection with conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection;

b. for enhanced recovery of oil and natural gas; and

c. for storage of hydrocarbons which are liquid at standard temperature and pressure.

3. Class III. Wells which inject for extraction of minerals or energy, including:

a. mining of sulfur by the Frasch process;

b. in situ production of uranium or other metals. This category includes only in situ production from ore bodies which have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V; and

c. solution mining of salts or potash.

4. Class IV

a. Wells used by generators of hazardous wastes or of radioactive wastes, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous wastes or radioactive wastes into a formation which within one-fourth mile of the well contains an underground source of drinking water. This includes the disposal of hazardous waste into what would otherwise be septic systems and cesspools, regardless of their capacity.

b. Wells used by generators of hazardous wastes or of radioactive wastes, by owners or operators of hazardous wastes management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous wastes or radioactive waste above a formation which within one-fourth mile of the well contains an underground source of drinking water. This includes the disposal of hazardous waste into what would otherwise be septic systems and cesspools, regardless of their capacity.

c. Wells used by generators of hazardous wastes or by owners or operators of hazardous waste management facilities, to dispose of hazardous wastes which cannot be classified under §103.C.1.a or 103.C.4.a and b (e.g., wells used to dispose of hazardous wastes into or above a formation which contains an aquifer which has been exempted pursuant to §103.H). This includes the disposal of hazardous waste into what would otherwise be septic systems and cesspools, regardless of their capacity.

5. Class V. Injection wells not included in Class I, II, III, or IV. Typically, Class V wells are shallow wells used to place a variety of fluids directly below the land surface. However, if the fluids placed in the ground qualify as a hazardous waste under the Resource Conservation and Recovery Act (RCRA), the well is either a Class I or Class IV well. Class V wells include:

a. air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump;

b. large-capacity cesspools, including multiple dwelling, community or regional cesspools, or other devices that receive sanitary wastes, containing human excreta, which have an open bottom and sometimes have perforated sides (see §109.D.2). The UIC requirements do not apply to single family residential cesspools or to nonresidential cesspools which receive solely sanitary waste and have the capacity to serve fewer than 20 persons a day;

c. cooling water return flow wells used to inject water previously used for cooling;

d. drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation;

e. dry wells used for the injection of wastes into a subsurface formation;

f. recharge wells used to replenish the water in an aquifer;

g. salt water intrusion barrier wells used to inject water into a USDW to prevent the intrusion of salt water into the USDW;

h. sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines, whether what is injected is radioactive or not;

i. septic system wells used to inject the waste or effluent from a multiple dwelling, business establishment, community or regional business establishment septic tank (see §103.C.6). The UIC requirements do not apply to single family residential septic system wells, or to nonresidential septic system wells which are used solely for the disposal of sanitary waste and have the capacity to serve fewer than 20 persons a day;

j. subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of an USDW;

k. injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electric power;

l. wells used for solution mining of conventional mines such as stopes leaching;

m. injection wells used for in situ recovery of lignite, coal, tar, sands, and oil shale;

n. wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts; and

o. injection wells used in experimental technologies;

p. motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work. Fluids disposed in these wells may contain organic and inorganic chemicals in concentrations that exceed the maximum contaminant levels (MCLs) established by the primary drinking water regulations. These fluids also may include waste petroleum products and may contain contaminants, such as heavy metals and volatile organic compounds, which pose risks to human health.

6. Specific Exclusions. The following are not covered by these regulations:

a. individual or single family residential or nonresidential cesspools, septic systems or similar waste disposal systems, if such systems:

i. are used solely for the disposal of sanitary waste; and

ii. have the capacity to serve fewer than 20 persons a day;

b. injection wells located on a drilling platform or other site that is beyond the state's territorial waters; and

c. any dug hole, drilled hole, or bored shaft which is not used for emplacement of fluids underground.

D. Prohibition of Movement of Fluid into Underground Sources of Drinking Water

1. No authorization by permit or rule shall allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of the Louisiana Drinking Water Regulations, Chapter VIII of the State Sanitary Code or may otherwise adversely affect the health of persons. The applicant for a permit shall have the burden of showing that the requirements of this Section are met.

2. For Class I and III wells, if any water quality monitoring of an USDW indicates the movement of any contaminant into the USDW, except as authorized under §109, the commissioner shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement. In the case of wells authorized by permit, these additional requirements shall be imposed by modifying the permit in accordance with §113.C, or the permit may be terminated under §113.E if cause exists, or appropriate enforcement action may be taken if the permit has been violated. In the case of wells authorized by rule, see §103.E.1.

3. If at any time the commissioner learns that a Class V well may cause a violation of the Louisiana Drinking Water Regulations, Chapter XII of the State Sanitary Code or may be otherwise adversely affecting the health of persons, he shall:

a. require the injector to obtain a permit;

b. order the injector to take such actions (including, where required, closure of the injection well) as may be necessary to prevent the violation or adverse effect; or

c. take enforcement action.

4. Notwithstanding any other provision of this Section, the commissioner may take emergency action upon receipt of information that a contaminant which is present in or likely to enter a public water system may present an imminent and substantial endangerment to the health or safety of persons.

E. Authorization of Underground Injection by Rule

1. The commissioner may authorize underground injection by rule as outlined in this Section.

a. Injection into existing Class I and III wells or Class III projects may be authorized by rule for up to five years from the effective date of the Louisiana UIC program. Except for commercial Class I wells in §103.F, all such wells must apply for a permit within four years of the effective date and receive a permit within five years of the effective date. The commissioner will establish a schedule for repermitting prior to the effective date.

i. Rules under §103.E.1 shall specify that the authorization to inject shall expire:

(a). upon the effective date of the permit or permit denial, if a permit application has been filed in a timely manner as specified in §105.B;

(b). if a permit application has not been filed in a timely manner as specified in §105.B; or

(c). unless a complete permit application is pending, not later than five years after the effective date.

ii. Notwithstanding the prohibition in §103.B, rules which under §103.E.1.a authorizing Class III wells or projects in existing fields or projects may allow them to continue normal operations until permitted, including construction, operation, and plugging and abandonment of wells provided the owner or operator maintains compliance with all applicable requirements.

iii. Rules under §103.E.1 shall require compliance no later than one year after authorization with the following requirements applicable to permittee, except the terms permit and permittee shall be read to include rules and those authorized by rule:

(a). requirements for commercial wells injecting hazardous waste accompanied by a manifest: §103.F;

(b). financial responsibility: §107.C;

(c). notice of abandonment: §107.L;

(d). 24-hour reporting on noncompliance: §107.L.6;

(e). operating, monitoring, and reporting requirements (except mechanical integrity): §109.A.6, 7, and 8 (Class I) and §109.B.6, 7, and 8 (Class III);

(f). plugging and abandonment: §109.A.10, §109.B.10;

(g). record keeping requirements: §109.A.11, §109.B.12; and

(h). exemption from rule where authorized by temporary permit: §115.B.

b.i. Injection into existing Class IV wells as defined in §103.C.4.a may be authorized for a period not to exceed six months after approval or promulgation of the UIC program. Such rules shall apply the requirements of §103.F.3.

ii. Injection into existing Class IV wells as defined in §103.C.4.b and c may be authorized until six months after approval or promulgation of a UIC program incorporating criteria and standards under §109.C applicable to Class IV injection wells. Such rules shall apply the requirements of §103.F.3.

iii. notwithstanding the requirements of Clauses i and ii above, wells used to inject contaminated ground water that has been treated and is being injected into the same formation from which it was drawn are authorized by rule for the life of the well if such subsurface emplacement of fluids is approved by appropriate state or federal agencies pursuant to provisions for cleanup of releases under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or pursuant to requirements and provisions under the Resource Conservation and Recovery Act (RCRA).

c. Injection into Class V wells may be authorized by rule until requirements under future regulations become applicable to the specific type of Class V well. However, the owner or operator of a Class V well authorized by rule shall provide an inventory of the Class V well(s) to the commissioner. At a minimum, the inventory shall include the following information for each Class V well:

i. well and/or facility name and location;

ii. name and address of legal contact;

iii. ownership of well and/or facility;

iv. date of well installation/completion;

v. nature and type of injection well(s);

vi. depth and operating status of injection well(s); and

vii. any additional information required by the commissioner.

d. Class V well authorization by rule shall expire upon the effective date of a permit issued pursuant to these rules or upon proper closure of the well.

e. An owner or operator of a Class V well which is authorized by rule is prohibited from injecting into the well:

i. upon the effective date of an applicable permit denial;

ii. upon failure to submit inventory information pursuant to §103.E.1.c. above;

iii. upon failure to submit a permit application pursuant to §103.E.2.b. below; or

iv. upon failure to comply with the commissioner's request for any additional information.

2. Requiring a Permit

a. The commissioner may require any Class I, III, or V injection well or project authorized by a rule to apply for and obtain a UIC permit. Cases where UIC permits may be required include:

i. the injection well is not in compliance with any requirements of the rule;

(Note: Any underground injection which violates any rule under this Section is subject to appropriate enforcement action.)

ii. the injection well is not or no longer is within the category of wells and types of wells operations authorized in the rule; and

iii. the protection of USDW requires that the injection operation be regulated by requirements, such as for corrective action, monitoring and reporting, or operation, which are not contained in the rule.

b. The commissioner may require the owner or operator authorized by a rule to apply for a UIC permit by sending the owner or operator a letter containing a brief statement of the reasons, an application form, a statement setting a time for the owner or operator to file the application, and a statement that upon the effective date of the UIC permit the rule no longer applies to the activities regulated under the UIC program.

c. Any owner or operator authorized by a rule may request to be excluded from the coverage of the rule by applying for a UIC permit. The owner or operator shall submit an application under §105.B with reasons supporting the request, to the commissioner. The commissioner may grant any such request.

d. A Class V well satisfying any of the requirements of Clauses i through iv below is no longer authorized by rule; therefore, the owner or operator of the well shall apply for and obtain a UIC permit or permanently close the well:

i. the Class V well does not comply with the prohibition of fluid movement standard in §103.D;

ii. the Class V well is an existing large-capacity cesspool (in which case, the well shall be permanently closed by April 5, 2005) or an existing Class V motor

vehicle waste disposal well (in which case, the well shall be permanently closed by January 1, 2005). These rules prohibit the permitting and construction start-up of new motor vehicle waste disposal wells and new large-capacity cesspools on and after April 5, 2000;

iii. the commissioner specifically requires the Class V well be permitted (in which case, rule authorization expires upon the effective date of the permit, or you are prohibited from injecting into your well upon failure to submit a permit application in a timely manner as specified by the commissioner; or upon the effective date of permit denial);

iv. the owner or operator of the Class V well failed to submit inventory information as described in §103.E.1.c (in which case, injection into the well is prohibited until the inventory requirements are met).

F. Requirements for Commercial Wells Injecting Hazardous Waste Accompanied by a Manifest

1. Applicability. The regulations in this Section apply to all generators of hazardous waste, and to owners or operators of all commercial hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest.

2. Authorization. The owner or operator of any commercial injection well that is used to inject hazardous wastes accompanied by a manifest or delivery document shall apply for authorization to inject as specified in §105.B within six months after the effective date of the Louisiana UIC Program.

3. Requirements. In addition to requiring compliance with the applicable requirements of this Section and §109, the commissioner shall, for each facility meeting the requirements of §103.F.2, require that the owner or operator comply with the applicable requirements of the Louisiana Hazardous Waste Management program.

G. Prohibition of Class IV Wells. The following activities are prohibited:

1. the construction, operation, or maintenance of any Class IV well is prohibited except for wells used to inject contaminated ground water that has been treated and is being reinjected into the same formation from which it was drawn as part of a clean-up plan approved by appropriate state and federal agencies; however, this prohibition does not apply to the following:

a. wells used to inject hazardous waste into aquifers or portions thereof which have been exempted pursuant to §103.H, provided the exempted aquifer into which waste is injected underlies the lowermost formation containing a USDW; and

b. wells used to inject hazardous waste where no USDW exists within one-fourth mile of the well bore in any underground formation, provided that a determination is made that such injection is into a formation sufficiently isolated to ensure that injected fluids do not migrate from the injection zone.

H. Identification of Underground Sources of Drinking Water and Exempted Aquifers

1. The commissioner may identify (by narrative description, illustrations, maps, or other means) and shall protect, except where exempted under §103.H.2, as an underground source of drinking water, all aquifers or parts of aquifers which meet the definition of an underground source of drinking water. Even if an aquifer has not been specifically identified by the commissioner, it is an underground source of drinking water if it meets the definition.

2. After notice and opportunity for a public hearing the commissioner may identify (by narrative description, illustrations, maps, or other means) and describe in geographic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite, all aquifers or parts thereof which the commissioner proposes to designate as exempted aquifers if they meet the following criteria:

a. the aquifer does not currently serve as a source of drinking water; and

b. the aquifer cannot now and will not in the future serve as a source of drinking water because:

i. it is mineral, hydrocarbon or geothermal energy producing or can be demonstrated by a permit applicant as part of a permit application for a Class III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible;

ii. it is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

iii. it is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

iv. it is located over a Class III well mining area subject to subsidence or catastrophic collapse; or

c. the total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/1 and it is not reasonably expected to supply a public water system.

3. For Class III wells, the commissioner shall require an applicant for a permit, which necessitates an aquifer exemption under §103.H.2.b above, to furnish the data necessary to demonstrate that the aquifer is expected to be mineral or hydrocarbon producing. Information contained in the mining plan for the proposed project, such as a map and general description of the mining zone, general information on the mineralogy and geochemistry of the mining zone, analysis of the amenability of the mining zone to the proposed mining method, and a time-table of planned development of the mining zone shall be considered by the commissioner in addition to the information required in the well or area permit application.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D, 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 8:83 (February 1982), amended LR 11:640 (June 1985), LR 27:1698 (October 2001).

§105. Permit Application Requirements

A. Applicability. The rules and regulations of this Section apply to all Class I and III injection wells or project applications required to be filed with the Department of Natural Resources (Office of Conservation) for authorization under La. R.S. 1950 Title 30.

B. Application Required

1. Permit Application. New applicants, permittees with expiring permits, and any person required to have a permit shall complete, sign, and submit an application in triplicate to the commissioner as described in this Section. Persons currently authorized with interim status under the Resource Conservation and Recovery Act (RCRA) or authorized by rule shall apply for permits when required by the commissioner (see §105.B.2).

2. Time to Apply. Any person who performs or proposes an underground injection for which a permit is or will be required shall submit an application to the commissioner as follows:

a. for existing Class I and III wells or projects no later than four years after inauguration of the UIC program and according to the schedule of repermitting established by the commissioner;

b. for existing Class I commercial facilities injecting hazardous waste, within six months of the effective date of the UIC program;

c. for new Class I injection wells, a reasonable time before construction is expected to begin; or

d. for new Class III injection wells, except new wells covered by an existing area permit, a reasonable time before construction is expected to begin.

C. Who Applies. It is the duty of the owner of a facility or activity to submit an application for permit. When a facility is owned by one person and operated by another, it is the operator's duty to obtain a permit.

D. Signature Requirements for Applications

1. All permit applications shall be signed as follows:

a. for a corporation: by a principal executive officer of at least the level of vice-president, or a duly authorized representative of that person if the representative performs similar policy-making functions for the corporation. A person is a duly authorized representative only if:

i. the authorization is made in writing by a principal executive officer of at least the level of vice-president;

ii. the authorization specifies either an individual or a position have responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

iii. the written authorization is submitted to the commissioner;

b. for partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

c. for a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official.

2. If an authorization under §105.D.I is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the signature requirements must be submitted to the commissioner prior to or together with any reports, information or applications to be signed by an authorized representative.

3. Certification. Any person signing a document under §105.D.1 shall make the following certification:

> I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

E. Application Contents for Class I Wells. All applicants for Class I permits shall provide the following information to the commissioner, using the application form provided:

1. administrative information;

a. the name, mailing address, and location of the facility for which the application is submitted;

b. ownership status as federal, state, private, public, or other entity;

c. the operator's name, address and telephone number;

d. a brief description of the nature of the business associated with the facility;

e. the activity or activities conducted by the applicant which require the applicant to obtain a permit under these regulations;

f. up to four SIC Codes which best reflect the principle products or services provided by the facility;

g. a listing of all permits or construction approvals which the applicant has received or applied for under any of the following programs and which specifically affect the legal or technical ability of the applicant to undertake the activity or activities to be conducted under the permit filed here for:

i. the Louisiana Hazardous Waste Management Program;

ii. this or any other Underground Injection Control Program;

iii. NPDES Program under the Clean Water Act;

iv. Prevention of Significant Deterioration (PSD) Program under the Clean Air Act;

v. Nonattainment Program under the Clean Air Act;

vi. National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act;

vii. Ocean Dumping Permit under the Marine Protection Research and Sanctuaries Act;

viii. dredge or fill permits under Section 404 of the Clean Water Act; and

ix. other relevant environmental permits, including, but not limited to any state permits issued under the Louisiana Coastal Resources Program, the Louisiana Surface Mining Program or the Louisiana Natural and Scenic Streams System;

h. jurisdiction:

i. whether the facility is located on Indian lands or other lands under the jurisdiction or protection of the federal government;

ii. whether the facility is located on state water bottoms or other lands owned by or under the jurisdiction or protection of the state;

2. maps and related information for new and existing wells;

a. one or more maps, preferably USGS topographic map(s), with a scale of 1:24,000 showing the property boundaries of the facility, each injection well for which a permit is sought and the area of review as described in §109.A.2;

i. the map(s) must show the section, township and range of the area in which the activity is located and any parish, city or municipality boundary lines within one mile of the injection well;

ii. within the area of review the map(s) must show the name and/or number and location of all injection wells, producing wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, public water systems, water wells (public and private) and other pertinent surface features including residences and roads;

iii. the map(s) should also show faults if known or projected;

iv. only information of public record is required to be included on the map(s); however, the applicant is required to undertake a diligent search to locate all water wells not listed in the public record;

b. generalized maps and cross sections illustrating the regional geology and hydrology;

c. maps and cross-sections to the necessary scale to detail the local geology and hydrology (two-mile radius of well minimum);

d. any other information required by the commissioner to evaluate the proposed well;

3. technical information for new wells, and:

a. a tabulation of data on all wells within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the commissioner may require;

b. proposed operating data:

i. average and maximum daily rate and volume of the injection fluid;

ii. average and maximum injection pressure; and

iii. source and an analysis of the chemical, physical, and biological characteristics of the injection fluid;

c. proposed formation testing program to obtain an analysis of the physical and chemical characteristics of the receiving formation;

d. proposed stimulation program;

e. proposed injection procedures (including storage and pre-injection treatment of the waste stream, and well use schedule);

f. schematic or other appropriate drawings of the surface (well head and related appurtenances) and subsurface construction details of the system;

g. plans (including maps) for meeting the monitoring requirements of §109.A.7;

h. construction procedures including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

i. contingency plans to cope with all shut-ins or well failures so as to prevent the migration of the contaminating fluids into underground sources of drinking water;

j. a certificate that the applicant has assured, through a performance bond or other appropriate means, the resources necessary to close, plug or abandon the well as required by §§109.A.10 and 107.C;

k. for wells within the area of review which penetrate the injection zone but are not properly completed or plugged, the corrective action proposed to be taken under §109.A.3;

l. calculation of the pressure increase in the proposed injection zone for a time period equal to the expected life of the well, preferably using Matthews and Russell, 1967 *Pressure Buildup and Flow Tests in Wells*, American Institute of Mining, Met. Eng. Monograph, Vol. 1);

m. calculation of the expected waste front travel using a model acceptable to the commissioner. A conservative value can be calculated by using the following formula:

$$r = \sqrt{\frac{v}{\pi b \phi}}$$

where:

r = radial distance of wastewater front from well;

v = cumulative volume of injected wastewater;

b = effective reservoir thickness;

ø = average effective porosity;

(Warner, D.L. and Lehr, J.H., *An Introduction to the Technology of Subsurface Wastewater Injection*, Robert S. Kerr Environmental Research Laboratory (EPA) Research Report, 1977)

n. any other information required by the commissioner to evaluate the proposed well;

4. technical information for existing wells:

a. a tabulation of data on all wells within the area of review and which penetrate the injection zone, (see §105.E.3.a);

b. operating data as required in §105.E.3.b;

c. formation testing results if performed prior to well operation;

d. stimulation program;

e. description of injection procedures (including storage and pre-injection treatment of the waste stream and well use schedule);

f. schematic or other appropriate drawings of the surface (wellhead and related appurtenances) and subsurface construction details of the system;

g. monitoring equipment as required in §109;

h. contingency plans as required in §105.E.3;

i. a plugging and abandonment certificate as required in §105.E.3;

j. proposed corrective action as required in §105.E.3.k;

k. calculation of the pressure increase in the injection zone as required in §105.E.3;

l. calculation of the waste front travel as required in §105.E.3;

m. measurement of bottomhole pressure and temperature at the time of repermitting or during the next workover operation;

n. a graphic presentation of the well's operational history consisting of the following:

i. a plot of representative values of injection pressure and injection rate versus time, from date of initial injection to the present (indicate cumulative volume);

ii. a plot of measured bottomhole pressure versus date if such measurements were made;

iii. indications of any workovers and associated problems, stimulations, waste stream changes and other events that would have a bearing on the well's performance, especially:

(a). any change of injection interval; or

(b). any other information the permittee or commissioner may consider useful;

o. copies of all logs and tests run during construction and subsequent operation of the well, including mechanical integrity tests;

p. a summary analysis of the data provided in §105.E.4; and

q. any other information required by the commissioner to evaluate the existing well.

F. Application Content for Class III Wells. Prior to the issuance of a permit for an existing Class III well or area to operate or the construction of a new Class III well the commissioner shall consider the following information (provided on the application form):

1. administrative information:

a. the name, mailing address, and location of the facility for which the application is submitted;

b. ownership status as federal, state, private, public, or other entity;

c. the operator's name, address and telephone number;

d. a brief description of the nature of the business associated with the activity;

e. the activity or activities conducted by the applicant which require the applicant to obtain a permit under these regulations;

f. up to four SIC Codes which best reflect the principal products or services provided by the facility;

g. a listing of all permits or construction approvals which the applicant has received or applied for under any of the following programs and which specifically affect the legal or technical ability of the applicant to undertake the activity or activities to be conducted by the applicant under the permit filed here for:

i. the Louisiana Hazardous Waste Management Program;

ii. this or any other Underground Injection Control Program;

iii. NPDES Program under the Clean Water Act;

iv. Prevention of Significant Deterioration (PSD) Program under the Clean Air Act;

v. Nonattainment Program under the Clean Air Act;

vi. National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act;

vii. Ocean Dumping Permit under the Marine Protection Research and Sanctuaries Act;

viii. dredge or fill permits under Section 404 of the Clean Water Act; and

ix. other relevant environmental permits, including, but not limited to any state permits issued under the Louisiana Coastal Resources Program, the Louisiana Surface Mining Program or the Louisiana Natural and Scenic Streams System;

h. jurisdiction:

i. whether the facility is located on Indian lands or other lands under the jurisdiction or protection of the federal government; or

ii. whether the facility is located on state water bottoms or other lands owned by or under the jurisdiction or protection of the state;

2. maps and related information:

a. a topographic or other map extending one mile beyond the property boundaries, depicting the facility and each well where fluids are injected underground; and those wells, springs, or surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant in the map area;

b. the section, township and range of the area in which the activity is located and any parish, city or municipality boundary lines within one mile of the activity location;

c. a map showing the injection well or project area for which the permit is sought and the applicable area of review. Within the area of review, the map must show the number, or name, and location of all existing producing wells, injection wells, abandoned wells and dry holes, public water systems and water wells. The map may also show surface bodies of water, mines (surface and subsurface), quarries, and other pertinent surface features including residences and roads, and faults if known or projected. Only information of public record and pertinent information known to the applicant is required to be included on this map;

d. maps and cross sections indicating the vertical limits of all underground sources of drinking water within the area of review, their position relative to the injection formation, and the direction of water movement, where known, in every underground source of drinking water which may be affected by the proposed injection;

e. generalized map and cross sections illustrating the regional geologic setting;

f. maps and cross sections detailing the geologic structure of the local area; and

g. any other information required by the commissioner to evaluate the proposed well or project;

3. technical information for new wells:

a. a tabulation of data reasonably available from public records or otherwise known to the applicant on all wells within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the commissioner may require. In cases where the information would be repetitive and the wells are of similar age, type, and construction, the commissioner may elect to only require data on a representative number of wells;

b.i. proposed operating data:

(a). average and maximum daily rate and volume of fluid to be injected;

(b). average and maximum injection pressure; and

(c). qualitative analysis and ranges in concentrations of all constituents of injected fluids. The applicant may request confidentiality;

ii. if the information is proprietary an applicant may, in lieu of the ranges in concentrations, choose to submit maximum concentrations which shall not be exceeded. In such a case the applicant shall retain records of the undisclosed concentrations and provide them upon request to the commissioner as part of any enforcement investigation;

c. proposed formation testing program to obtain the information required by §109.B.4.c and d;

d. proposed stimulation program;

e. proposed injection procedure;

f. schematic or other appropriate drawings of the surface and subsurface construction details of the system;

g. plans (including maps) for meeting the monitoring requirements of §109.B.7;

h. expected changes in pressure, native fluid displacement, and direction of movement of injection fluid;

i. contingency plans to cope with all shut-ins or well failures so as to prevent the migration of the contaminating fluids into underground sources of drinking water;

j. a certificate that the applicant has assured, through a performance bond or other appropriate means, the resources necessary to close, plug or abandon the well as required by §§109.B.10 and 107.C; and

k. for wells within the area of review which penetrate the injection zone but are not properly completed or plugged, the corrective action proposed to be taken under §109.B.3.

G. Recordkeeping of Application Information. The applicant shall keep records of all pertinent data used to complete the permit applications and any supplemental information submitted under these regulations for a period of at least three years from the date the application is signed.

H. Confidentiality of Information. Information obtained by any rule, regulations, order, or permit term or condition adopted or issued here-under, or by any investigation authorized thereby, shall be available to the public, unless nondisclosure is requested in writing and such information is determined by the commissioner to require confidentiality to protect trade secrets, processes, operations, style of work, apparatus, statistical data, income, profits, losses, or in order to protect any plan, process, tool, mechanism, or compound; provided that such nondisclosure shall not apply to information that is necessary for use by duly authorized officers or employees of state or federal government in carrying out their responsibilities under these regulations or applicable federal or state law. If no claim is made at the time of submission, the commissioner may make the information available to the public without further notice.

1. Claims of confidentiality for the following information will be denied:

a. the name and address of any permit applicant or permittee; and

b. information which deals with the existence, absence, or level of contaminants in drinking water.

I. Filing Fee. Each application shall be accompanied by a per well, nonrefundable filing fee as required by Statewide Order No. 29-R-00/01 (LAC XIX.Chapter 7) or successor document.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D, 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 8:83 (February 1982), LR 27:1699 (October 2001).

§107. Legal Permit Conditions

A. Applicability. The rules and regulations of this Section set forth legal conditions for Class I, III, IV and V well permits.

B. Signatories. All reports required by permits and other information requested by the commissioner shall be signed as in applications by a person described in §105.D.

C. Financial Responsibility. The permit shall require the permittee to maintain financial responsibility and resources to close, plug, and abandon the underground injection wells in a manner prescribed by the commissioner. The permittee must show evidence of financial responsibility to the commissioner by the submission of a surety bond, or other adequate assurance, such as financial statements or other materials acceptable to the commissioner.

D. Duty to Comply. The permittee must comply with all conditions of a permit. Any permit noncompliance constitutes a violation of the act and is grounds for enforcement action, or permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application if the commissioner determines that such noncompliance endangers underground sources of drinking water. The permittee need not comply with the provisions of his permit to the extent and for the duration such noncompliance is authorized in a (temporary) emergency permit under §115.

E. Duty to Reapply. If the permittee wishes to continue an activity regulated by a permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

F. Duty to Halt or Reduce Activity. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

G. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment such as the contamination of underground sources of drinking water resulting from noncompliance with this permit.

H. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of his permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operation staffing and training, and adequate laboratory process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

I. Inspection and Entry. Inspection and entry shall be allowed as prescribed in R.S. of 1950, Title 30, Section 4.

J. Compliance. Except for Class III wells, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with the act and these regulations.

K. Property Rights. The issuance of a permit does not convey any property rights of any sort, or any exclusive privilege or servitude.

L. Notification Requirements

1. Planned Changes. The permittee shall give notice to the commissioner as soon as possible of any planned physical alterations or additions to the permitted facility which may constitute a major modification of the permit.

2. Notice of Well Completion

a. A new injection well may not commence injection until construction is complete, a notice of completion has been submitted to the commissioner, and

except for wells authorized by area permit or rule, the commissioner has inspected or otherwise reviewed the injection well and finds it is in compliance with the conditions of the permit.

b. The commissioner shall inspect the well within 10 working days of the notice of completion required in §107.L.2.a.

c. If the permittee has not received notice from the commissioner of his intent to inspect or review the well or if the commissioner has not inspected or otherwise reviewed the new injection well within 10 working days of the notice of completion in §107.L.2.a, prior inspection or review is waived and the permittee may commence injection.

3. Anticipated Noncompliance. The permittee shall give advance notice to the commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

4. Transfers. A permit is not transferable to any person except after notice to the commissioner. The commissioner may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary. (See §113.)

5. Compliance Schedules. Report of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in these regulations shall be submitted to the commissioner no later than 14 days following each schedule date.

6. Twenty-Four Hour Reporting

a. The permittee shall report to the commissioner any noncompliance which may endanger health or the environment. Any information pertinent to the noncompliance shall be reported by telephone at (225) 342-5515 within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances and shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance.

b. The following additional information must be reported within the 24-hour period provided above:

i. any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW;

ii. any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDW's.

7. The permittee shall notify the commissioner at such times as the permit requires before conversion or abandonment of the well or in the case of area permits before closure of the project.

8. Other Noncompliance. The permittee shall report all instances of noncompliance not reported under §107.L.5 and 6, at the time quarterly reports are submitted. The reports shall contain the information listed in §107.L.6.

9. Other Information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the commissioner, it shall promptly submit such facts or information.

M. Duration of Permits

1. UIC permits for Class I and Class V wells shall be effective for a fixed term not to exceed 10 years. Permits for Class III wells shall be issued for a period up to the operating life of the facility. The commissioner shall review each issued Class III well or area permit at least once every five years to determine whether it should be modified, revoked and reissued, terminated, or a minor modification made.

2. The term of a permit shall not be extended by modification beyond the maximum duration specified in this Section, except as provided in §107.M.4 below.

3. The commissioner may issue, for cause, any permit for a duration that is less than the full allowable term under this Section.

4. The conditions of an expired permit may continue in force until the effective date of a new permit if the permittee has submitted a timely and a complete application for a new permit, and the commissioner, through no fault of the permittee, does not issue a new permit with an effective date on or before the expiration date of the previous permit (e.g., when issuance is impracticable due to time or resource constraints).

a. Permits continued under this Section remain fully effective and enforceable.

b. When the permittee is not in compliance with the conditions of the expiring or expired permit, the commissioner may choose to do any or all of the following:

i. initiate enforcement action based upon the permit which has been continued;

ii. issue a notice of intent to deny the new permit. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;

iii. issue a new permit under the requirements of these rules for issuing a new permit with appropriate conditions; or

iv. take other actions authorized by these regulations.

N. Schedules of Compliance. The permit may, when appropriate, specify a schedule of compliance leading to compliance with the act and these regulations.

1. Time for Compliance. Any schedules of compliance under this Section shall require compliance as soon as possible but not later than three years after the effective date of the permit.

2. Interim Dates. Except as provided in §107.N.2.b, if a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

a. The time between interim dates shall not exceed one year.

b. If the time necessary for completion of any interim requirements (such as the construction of a control facility) is more than one year and is not readily divisible into stages for completion, the permit shall specify interim dates for submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

3. Reporting. The permit shall be written to require that progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

O. Additional Conditions. The commissioner shall impose on a case-by-case basis such additional conditions as are necessary to protect underground sources of drinking water.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D, 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 8:83 (February 1982), amended LR 11:640 (June 1985), LR 27:1700 (October 2001).

§109. Technical Criteria and Standards

A. Class I Wells

1. Applicability. This Subsection establishes technical criteria and standards for regulation of Class I wells which possess a permit or are authorized by rule.

2. Area of Review

a. The area of review for each Class I injection well shall be a fixed radius around the well of not less than two miles.

b. All known unplugged or improperly plugged and abandoned wells in the area of review which penetrate the injection zone are subject to the corrective action requirements of §109.A.3.

3. Corrective Action

a. Coverage. Applicants for Class I injection well permits shall identify the location of all known wells within the area of review which penetrate the injection zone. For such wells which are improperly sealed, completed or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the commissioner shall incorporate it into the permit as a condition. Where the commissioner's review of an application indicates that the permittee's plan is inadequate (based on the factors in §109.A.3.c) the commissioner shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit under §109.A.3.b, or deny the application.

b. Requirements

i. Existing Injection Wells. Any permit issued for an existing injection well requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under §109.A.3.a to be completed as soon as possible.

ii. New Injection Wells. No permit for a new injection well may authorize injection until all required correction action has been taken.

iii. Injection Pressure Limitation. The commissioner may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not cause the movement of fluids into a USDW through any improperly completed or abandoned will within the area of review. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other required corrective action has been taken.

c. In determining the adequacy of corrective action proposed by an application for a well requiring such action and in determining the additional steps needed to prevent fluid movement into underground sources of drinking water, the following criteria and factors shall be considered by the commissioner:

i. nature and volume of the injected fluid;

ii. nature of native fluids or by-products of injection;

iii. potentially affected population;

iv. geology;

v. hydrology;

vi. history of the injection operation;

vii. completion and plugging records;

viii. abandonment procedures in effect at the time the well was abandoned; and

ix. hydraulic connections with underground sources of drinking water.

4. Construction Requirements

a. Siting. All Class I wells shall be sited in such a fashion that they inject into a formation which is beneath the lower most formation containing an underground source of drinking water within one quarter mile radius of the well bore.

b. Casing and Cementing

i. All Class I wells shall be cased and cemented to prevent the movement of fluids into or between USDWs.

ii. Cementing shall be by the pump and plug or other method approved by the commissioner and sufficient amount of cement shall be used to fill the annular space between the hole and casing and between casing strings to the surface of the ground.

iii. The casing and cement used in the construction of each new injection well shall be designed for the life expectancy of the well.

iv. Surface casing shall be set to a minimum subsurface depth determined by the commissioner to properly protect underground sources of drinking water and cemented to the surface. If the long string or intermediate casing is to be perforated, the approved casing shall be set to a depth below the injection zone and cemented to the surface. If an approved alternate method is used, such as the setting of a screen, the casing shall be set to the top of the injection zone and cemented back to the surface.

v. In determining and specifying casing and cementing requirements, the following factors shall be considered:

(a). depth to the injection zone;

(b). injection pressure, external pressure, internal pressure, and axial loading;

(c). hole size;

(d). size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);

(e). corrosive effects of injected fluid, formation fluids, and temperatures;

(f). lithology of injection and confining intervals; and

(g). types and grades of cement.

c. Tubing and Packer

i. All Class I injection wells shall inject fluids through tubing with either a packer set above the injection zone or a fluid seal system approved by the commissioner. In determining and specifying requirements for tubing, packer or fluid seal system, the following factors shall be considered:

(a). depth of setting;

(b). characteristics of injection fluid;

(c). injection pressure;

(d). annular pressure;

(e). rate, temperature, and volume of injected fluid; and

(f). size of casing.

ii. The use of other alternatives to a packer may be allowed with the written approval of the commissioner. To obtain approval, the operator shall submit a written request to the commissioner, which shall set forth the proposed alternative and all technical data supporting its use. The commissioner shall approve the request if the alternative method will reliably provide a comparable level of protection to underground sources of drinking water. The commissioner may approve an alternative method for an individual well or for general use.

iii. A corrosion resistant fluid shall be placed under pressure into the tubing-long string casing annulus. The annulus pressure shall be monitored in accordance with §109.A.7.d and 9.b.

d. Logs and Tests. Appropriate logs and other tests shall be conducted during the drilling and construction of new Class I wells. All logs and tests shall be interpreted by the service company which processed the logs or conducted the test, or by other qualified persons. A minimum of the following logs and tests shall be conducted.

i. Deviation checks on all holes constructed by first drilling a pilot hole, and then enlarging the pilot hole by reaming or another method. Such checks shall be at sufficiently frequent intervals to assure that avenues for fluid migration in the form of diverging holes are not created during drilling.

ii. For surface casing:

(a). spontaneous potential, resistivity or gamma-resistivity, and caliper logs before the casing is installed; and

(b). a cement bond, temperature, or density log after the casing is set and cemented.

iii. For intermediate and long string casing:

(a). spontaneous potential, resistivity or gamma-resistivity, and caliper logs before the casing is installed;

(b). a fracture finder log when applicable; and

(c). a cement bond log, a gamma-ray (full hole) log, and an inclination survey after the casing is set and cemented.

iv. All casing strings shall be pressure tested at conditions specified by the commissioner and reported on form CSG.T.

v. If core data is not available from nearby wells full-hole cores shall be taken from selected intervals of the injection zone and lowermost confining zone; or, if full-hole coring is not feasible or adequate core recovery is not achieved, side-wall cores shall be taken at sufficient intervals to yield representative data for selected parts of the injection zone and lowermost confining zone. Core analysis shall include a determination of permeability, porosity, bulk density, and other necessary tests.

e. Injectivity Tests. After completion of the well, injectivity tests shall be performed to determine the well capacity and reservoir characteristics. Surveys shall be performed to establish preferred injection zones. Prior to performing injectivity tests, the bottom hole pressure, bottom hole temperature, and static fluid level shall be determined, and a representative sample of formation fluid shall be obtained for chemical analysis.

f. Construction Supervision. All phases of well construction and all phases of any well workover shall be supervised by a person who is knowledgeable and experienced in practical drilling engineering and who is familiar with the special conditions and requirements of injection well construction.

5. Pre-Operation Requirements. In order to receive approval to start operation of a new well, the permittee must supply the following to the commissioner within 30 days of well completion.

a. A completion report containing, at a minimum, the following:

i. the drilling and complete and accurate record of the depth, thickness, and character of the strata penetrated;

ii. casing and cement records;

iii. well logs;

iv. injectivity test data;

v. measured bottomhole temperature and pressure;

vi. core sample testing results;

vii. formation fluid analysis;

viii. compatibility testing results;

ix. test data which provides a demonstration of mechanical integrity pursuant to §109.A.9;

x. a descriptive report interpreting the results of all logs and tests;

xi. a revised formation pressure build-up calculation in accordance with §105.E.3.l;

xii. a revised waste front travel calculation (§105.E.3.m); and

xiii. revised cross sections of the injection zone using pertinent data above.

b. For commercial Class I wells, written notification that a copy of the permit has been filed with the appropriate authorities where the well is located.

c. Written Notification of the Anticipated Well Startup Date. Compliance with all pre-operation terms of the permit must occur and approval to start operation must be received from the commissioner prior to beginning injection operations (see §107.L).

d. The commissioner may give permission to commence injection for an interim period of 30 days following the inspection required in §107.L.2.b. Final permission to inject will be given only upon receipt and approval of the completion report required in §109.A.5.

6. Operating Requirements

a.i. Except during well stimulation, the Maximum Surface Injection Pressure (MSIP) shall not exceed the surface injection pressure needed to initiate fracture of the injection or confining zone(s) and shall be calculated by following the formula:

$$MSIP = 0.85 [BHP_F - H] + TF + SE$$

where:

BHP_F = bottomhole fracture pressure established by gradients for the area the well is located in or actual testing

H = hydrostatic pressure

TF = frictional loss in the tubing during maximum injection rate

SE = skin effects as established by accepted engineering test procedures as described in "Pressure Buildup and Flow Tests in Wells", by C.S. Matthews and D.G. Russell or approved alternate tests (optional variable)

ii. In no case shall the calculated maximum surface injection pressure exceed the surface injection pressure needed to initiate fractures in the confining or injection zone(s) or cause movement of injection or formation fluids into a USDW.

b. Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited.

c. Unless an alternative to a packer has been approved by the commissioner, the tubing-long string casing annulus shall be filled with a corrosion resistant fluid approved by the commissioner. A positive pressure, also approved by the commissioner, shall be maintained on the annulus to detect well malfunctions.

d. A protective barrier shall be maintained around the wellhead and related appurtenances during all normal in-service and out-of-service periods for protection against mechanical damage.

e. A sign shall be maintained on the protective barrier of each injection well identifying the well class (Class I) operator, well name and/or number, UIC permit number, and any other information required by the commissioner.

f. Approval by the commissioner shall be obtained before the permittee may begin any workover operation (see §109.A.8.b.i). All fluids and materials (sand, etc.) removed from a well during any workover operation shall be contained and disposed of properly.

7. Monitoring Requirements

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Records of monitoring information shall include:

i. the date, exact place, and time of sampling or measurements;

ii. the individual(s) who performed the sampling or measurements;

iii. the date(s) analyses were performed;

iv. the individual(s) who performed the analyses;

v. the analytical techniques or methods used; and

vi. the results of such analyses.

c. Injection fluids shall be sampled and analyzed with a frequency sufficient to yield data representative of their characteristics.

d. Pressure gauges shall be installed and properly maintained on the injection tubing and on the annulus at the wellhead.

e. Continuous recording devices shall be installed and maintained in proper operating condition at all times to monitor and record injection tubing pressures, injection flow rates, injection volumes, tubing-long string casing annulus pressure, and any other specified data. The instruments shall be housed in weatherproof enclosures.

f. Any wells within the area of review selected for the observation of water quality, formation pressure, or any parameter, shall be monitored at a frequency sufficient to protect USDWs.

g. Mechanical integrity shall be demonstrated and reported according to the procedures, and at the frequency, specified in §109.A.9.

8. Reporting Requirements

a. Quarterly Reports to the Commissioner

i. This report shall include:

(a). the physical, chemical, and other relevant characteristics of the injection stream;

(b). monthly average, maximum, and minimum values for injection pressure, flow rate and volume, cumulative volume, and annular pressure;

(c). the results of any mechanical integrity tests performed during the quarter;

(d). the results of any other well test performed during the quarter;

(e). the results of monitoring prescribed in §109.A.7.f; and

(f). the results of any well workover performed during the quarter including minor well maintenance.

ii. This report shall be filed four times a year within 30 days after the quarter end and if not received as required, the commissioner may commence appropriate enforcement action.

b. Workover Reports

i. Notification of Workover. The permittee shall notify the commissioner by telephone at (225) 342-5515 before commencing any workover operation which requires the use of a rig. In addition, the operator must obtain a work permit prior to any workover operation such as plug and abandon, deepen, perforate, squeeze, plugback, side-track, pull casing, pull tubing, or change zone of completion (disposal).

ii. Completed Workover Report. The first quarterly report after the completion of a workover shall include the reason for the well workover and the details of all work performed.

iii. Bottom Hole Pressure Report. During major workovers, the bottom hole pressure shall be determined either by direct measurement by conventional techniques or by calculation using specific gravity of fluid in the well bore and the static fluid level as specified by the commissioner.

9. Mechanical Integrity Testing

a. Mechanical integrity of Class I injection wells shall be defined as:

i. no significant leak(s) in the casing, tubing or packer; and

ii. no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore.

b. One of the following tests must be used to demonstrate the absence of significant leaks in §109.A.9.a.i above:

i. a fluid pressure test of the annular space witnessed by an Office of Conservation representative; or

ii. review of the continuous monitoring records required in §109.A.7 by an Office of Conservation representative.

c. One of the following tests may be used to demonstrate absence of significant vertical fluid movement in §109.A.9.a.ii above:

i. radioactive tracer survey;

ii. high resolution temperature survey;

iii. audio Log; and/or

iv. other test accepted by the industry may be allowed with prior written approval from the commissioner.

d. Frequency of Mechanical Integrity Tests

i. Mechanical integrity tests under §109.A.9.b shall be performed on an alternative basis unless otherwise ordered by the commissioner or his representative. The frequency of this mechanical integrity testing shall be quarterly for commercial Class I wells and semiannually for on-site Class I wells.

ii. For new wells, mechanical integrity tests under §109.A.9.c shall be performed annually during the first two years of the well permit period and no less than once every five years thereafter. For existing wells, mechanical integrity tests under §109.A.9.c shall be performed at the time of repermitting and no less than once every five years thereafter.

e. The commissioner or his representative reserves the right to specifically require more frequent integrity testing as well as the right to specify the method of testing in specific instances.

f. Except during workovers or routine maintenance, any well which is not operational shall conform to the mechanical integrity requirements of this Section and shall sustain a positive pressure on the annulus during the period

of non-use. When an operator plans to take a well out of operation, he shall submit a plan to the commissioner to assure the mechanical integrity of the well during non-use. If a well cannot meet the mechanical integrity requirements of this Section, the operator shall submit a plan to the commissioner within 30 days of the test, to properly bring the facility into compliance. If a plan is not submitted within 30 days or if the plan is considered inadequate, the operator will be given six months to plug and abandon the well as required in §109.A.10.

10. Plugging and Abandonment

a. Prior to plugging and abandoning a Class I well, the permittee shall submit to the commissioner a plan of plugging and abandonment which will include location, depth of plugs, type of cement and the general procedure for plugging. After receipt of this information, the commissioner may approve, modify or deny the plan of abandonment; the commissioner additionally may require the applicant to revise the plan.

b. Any Class I permit shall include conditions to ensure that plugging and abandonment of the well will not allow the movement of fluids either into an underground source of drinking water or from one USDW to another.

11. Recordkeeping Requirements

a. The permittee shall keep complete and accurate records of:

i. all monitoring required by the permit, including:

(a). continuous records of surface injection pressures;

(b). continuous records of the tubing-long string annulus pressures;

(c). continuous records of injection flow rates; and

(d). monthly total volume of injected fluids.

ii. all periodic well tests, including but not limited to:

(a). injection fluid analyses;

(b). bottom hole pressure determinations; and

(c). mechanical integrity.

b. The permittee shall retain records of all information resulting from any monitoring activities for a period of at least three years from the date of the sample or measurement. This period may be extended by request of the commissioner at any time.

c. In addition to Paragraph 11.b above, the permittee shall retain all records concerning the nature, composition, and volume of injected fluids until three years after completion of any plugging and abandonment procedures. The commissioner may require the owner or operator to deliver the records to the Office of Conservation at the conclusion of the retention period.

d. All records shall be made available for review upon request from a representative of the commissioner.

12. Waiver of Requirements

a. When injection does not occur into, through, or above an underground source of drinking water, the commissioner may authorize a Class I well with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring and reporting than required in this Section, to the extent that the reduction in requirements will not result in an increased risk of movement of fluids into an USDW.

b. When reducing requirements under this Section, the commissioner shall issue an order explaining the reasons for the action.

13. Additional Requirements. The commissioner may prescribe additional requirements for Class I wells in order to protect underground sources of drinking water.

B. Class III Wells

1. Applicability. This Subpart establishes criteria and standards for regulation of Class III wells or projects which possess a permit or are authorized by rule.

2. Area of Review

a. For individual Class III wells the area of review shall be a fixed radius around the well of not less than 1/4 mile.

b. For wells in a Class III project the area of review shall be the project area plus a circumscribing area the width of which is not less than 1/4 mile.

3. Corrective Action

a. Coverage. Applicants for class III injection well permits shall identify the location of all known wells within the injection well's area of review which penetrate the injection zone. For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water corrective action. Where the plan is adequate, the commissioner shall incorporate it into the permit as a condition. Where the commissioner's review of an application indicates that the permittee's plan is inadequate (based on the factors in Subparagraph c below) the commissioner shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit or deny the application.

b. Requirements

i. Existing Injection Wells. Any permit issued for an existing injection well requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under §109.B.3.a to be completed as soon as possible.

ii. New Injection Wells. No permit for a new injection well may authorize injection until all required correction action has been taken.

iii. Injection Pressure Limitation. The commissioner may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not cause the movement of fluids into a USDW

through any improperly completed or abandoned well within the area of review. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other required corrective action has been taken.

c. When setting corrective action requirements for Class III wells, the commissioner shall consider the overall effect of the project on the hydraulic gradient in potentially affected USDWs, and the corresponding changes in potentiometric surface(s) and flow direction(s) rather than the discrete effect of each well. If a decision is made that corrective action is not necessary based on the determinations above, the monitoring program required in §109.B.7 shall be designed to verify the validity of such determination.

d. In determining the adequacy of corrective action proposed by the applicant under §109.B.3.a above and in determining the additional steps needed to prevent fluid movement into underground sources of drinking water, the following criteria and factors shall be considered by the commissioner:

i. nature and volume of injected fluid;

ii. nature of native fluids or by-products of injection;

iii. potentially affected population;

iv. geology;

v. hydrology;

vi. history of the injection operation;

vii. completion and plugging records;

viii. abandonment procedures in effect at the time the well was abandoned; and

ix. hydraulic connections with underground sources of drinking water.

4. Construction Requirements

a. All new Class III wells shall be cased and cemented to prevent the migration of fluids into or between underground sources of drinking water. The commissioner may waive the cementing requirement for new wells in existing projects or portions of existing projects where he has substantial evidence that no contamination of underground sources of drinking water would result. The casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well. In determining and specifying casing and cementing requirements, the following factors shall be considered:

i. depth to the injection zone;

ii. injection pressure, external pressure, internal pressure, axial loading, etc.;

iii. hole size;

iv. size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);

v. corrosiveness of injected fluids and formation fluids;

vi. lithology of injection and confining zones; and

vii. type and grade of cement.

b. Appropriate logs and other tests shall be conducted of new Class III wells. A descriptive report interpreting the results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the commissioner. The logs and tests appropriate to each type of Class III well shall be determined based on the intended function, depth, construction, and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information that may arise from time to time as the construction of the well progresses. Deviation checks shall be conducted on all holes where pilot holes and reaming are used, unless the hole will be cased and cemented by circulating cement to the surface. Where deviation checks are necessary, they shall be conducted at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling.

c. Where the injection zone is a water bearing formation, the following information concerning the injection zone shall be determined or calculated for new Class III wells or projects:

i. fluid pressure;

ii. fracture pressure; and

iii. physical and chemical characteristics of the formation fluids.

d. Where the injection formation is not a water bearing formation, the information in §109.B.4.c.ii must be submitted.

e. Where injection is into a formation which contains water with less than 10,000 mg/1 TDS monitoring wells shall be completed into the injection zone and into any underground sources of drinking water above the injection zone which could be affected by the mining operation. These wells shall be located in such a fashion as to detect any excursion of injected fluids, process by-products, or formation fluids outside the mining area or zone. If the operation may be affected by subsidence or catastrophic collapse the monitoring wells shall be located so that they will not be physically affected.

f. Where injection is into a formation which does not contain water with less than 10,000 mg/1 TDS, no monitoring wells are necessary in the injection stratum.

g. Where the injection wells penetrate an USDW in an area subject to subsidence or catastrophic collapse an adequate number of monitoring wells shall be completed into the USDW to detect any movement of injected fluids, process by-products or formation fluids into the USDW. The monitoring wells shall be located outside the physical influence of the subsidence or catastrophic collapse.

h. In determining the number, location, construction and frequency of monitoring of the monitoring wells the following criteria shall be considered:

i. the population relying on the USDW affected or potentially affected by the injection operation;

ii. the proximity of the injection operation to points of withdrawal of drinking water;

iii. the local geology and hydrology;

iv. the operating pressures and whether a negative pressure gradient is being maintained;

v. the nature and volume of the injected fluid, the formation water, and the process by-products; and

vi. the injection well density.

5. Pre-Operation Requirements. Prior to granting approval for the operation of an individual Class III well, except for wells drilled under an area permit, the commissioner shall consider the following information:

a. all available logging and testing data on individual wells; representative logs on Class III projects;

b. a satisfactory demonstration of mechanical integrity for all new wells and for all existing salt solution wells;

c. the results of the formation testing program;

d. the status of corrective action on defective wells in the area of review;

e. the proposed operating data; and

f. the proposed injection procedures.

6. Operating Requirements. Operating requirements prescribed shall, at a minimum, specify that:

a. except during well stimulation injection pressure at the well-head shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. In no case shall injection pressure initiate fractures in the confining zone or cause the migration of injection or formation fluids into an underground source of drinking water; and

b. injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited.

7. Monitoring Requirements. Monitoring requirements shall, at a minimum, specify:

a. monitoring of the nature of injected fluids with sufficient frequency to yield representative data on its characteristics. Whenever the injection fluid is modified to the extent that the analysis required by §105.F.3.b.iii is incorrect or incomplete, a new analysis shall be provided to the commissioner;

b. monitoring of injection pressure and either flow rate or volume semi-monthly, or metering and daily recording of injected and produced fluid volumes as appropriate;

c. demonstration of mechanical integrity pursuant to §109.B.9 at least once every five years during the life of the well for salt solution mining;

d. monitoring of the fluid level in the injection zone semi-monthly, where appropriate and monitoring of the parameters chosen to measure water quality in the monitoring wells required by §109.B.4.3, semi-monthly;

e. quarterly monitoring of wells required by §109.B.4.g; and

f. all Class III wells may be monitored on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well, operating with a common manifold. Separate monitoring systems for each well are not required provided the owner/operator demonstrates that manifold monitoring is comparable to individual well monitoring.

8. Reporting Requirements. Reporting requirements shall, at a minimum, include:

a. quarterly reporting to the commissioner on required monitoring;

b. results of mechanical integrity and any other periodic test required by the commissioner reported with the first regular quarterly report after the completion of the test; and

c. monitoring may be reported on a project or field basis rather than individual well basis where manifold monitoring is used.

9. Mechanical Integrity

a. An injection well has mechanical integrity if:

i. there is no significant leak in the casing, tubing, or packer; and

ii. there is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore.

b. One of the following methods must be used to evaluate the absence of significant leaks under §109.B.9.a.i:

i. monitoring of annulus pressure; or

ii. pressure test with liquid or gas.

c. One of the following methods must be used to determine the absence of significant fluid movement under §109.B.9.a.ii:

i. for Class III wells where the nature of the casing precludes the use of the logging techniques prescribed in §109.B.9.c.iii, cementing records demonstrating the presence of adequate cement to prevent such migration; or

ii. the results of a temperature or noise log;

iii. for Class III wells where the commissioner elects to rely on cementing records to demonstrate the absence of significant fluid movement, the monitoring program prescribed by §109.B.7 shall be designed to verify the absence of significant fluid movement.

d. The commissioner may allow the use of a test to demonstrate mechanical integrity other than those listed in §109.B.9.b and c.ii.

e. In conducting and evaluating the tests enumerated in this Section or others to be allowed by the commissioner, the owner or operator and the commissioner shall apply methods and standards generally accepted in the industry. When the owner or operator reports the results of mechanical integrity tests to the commissioner, he shall include a description of the test(s) and the method(s) used. In making his evaluation, the commissioner shall review monitoring and other test data submitted since the previous evaluation.

10. Plugging and Abandonment

a. Any Class III permit shall include conditions to ensure that plugging and abandonment of the well will not allow the movement of fluids either into an underground source of drinking water or from one underground source of drinking water to another. Any applicant for a UIC permit shall be required to submit a plan for plugging and abandonment. Where the plan meets the requirements of this Section, the commissioner shall incorporate it into the permit as a condition. Where the commissioner's review of an application indicates that the permittee's plan is inadequate, the commissioner shall require the applicant to revise the plan, prescribe the conditions meeting the requirements of this Section, or deny the application. For purposes of this Section, temporary intermittent cessation of injection operations is not abandonment.

b. The permittee shall notify the commissioner at such time as the permit requires before conversion or abandonment of the well or in the case of area permits before closure of the project.

c. Prior to the abandoning Class III wells, the well shall be plugged with cement in a manner which will not allow the movement of fluids either into or between underground sources of drinking water. The commissioner may allow Class III wells to use other plugging materials if he is satisfied that such materials will prevent movement of fluids into or between underground sources of drinking water.

d. Placement of the cement plugs shall be accomplished by one of the following:

i. the Balance Method;

ii. the Dump Bailer Method; or

iii. the Two-Plug Method.

e. The well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the commissioner, prior to the placement of the cement plug(s).

f. The plugging and abandonment plan required in §109.B.10.a above shall, in the case of a Class III project which underlies or is in an aquifer which has been exempted under §103.H also demonstrate adequate protection of USDWs. The commissioner shall prescribe aquifer cleanup and monitoring where he deems it necessary and feasible to insure adequate protection of USDWs.

11. Area or Project Permit Authorization

a. The commissioner may issue a permit on an area basis, rather than for each well individually, provided that the permit is for injection wells:

i. described and identified by location in permit application(s) if they are existing wells, except that the commissioner may accept a single description of wells with substantially the same characteristics;

ii. within the same well field, facility site, reservoir, project, or similar unit in the state;

iii. operated by a single owner or operator; and

iv. used to inject other than hazardous waste.

b. Area permits shall specify:

i. the area within which underground injections are authorized; and

ii. the requirements for construction, monitoring, reporting, operation, and abandonment, for all wells authorized by the permit.

c. The area permit may authorize the permittee to construct and operate, convert, or plug and abandon wells within the permit area provided:

i. the permittee notifies the commissioner at such time as the permit requires;

ii. the additional well satisfies the criteria in §109.B.11.a and meets the requirements specified in the permit under §109.B.11.b; and

iii. the cumulative effects of drilling and operation of additional injection wells are considered by the commissioner during evaluation of the area permit application and are acceptable to the commissioner.

d. If the commissioner determines that any well constructed pursuant to §109.B.11.c does not satisfy any of the requirements of §109.B.11.c.i and c.ii, the commissioner may modify the permit under §113.C, terminate under §113.E, or take enforcement action. If the commissioner determines that cumulative effects are unacceptable, the permit may be modified under §113.C.

12. Recordkeeping Requirements

a. The permittee shall keep complete and accurate records of:

i. all monitoring required by the permit; and

ii. all periodic well tests.

b. The permittee shall retain records of all information resulting from any monitoring activities for a period of at least three years from the date of the sample or measurement. This period may be extended by request of the commissioner at any time.

c. In addition to §109.B.12.b above, the permittee shall retain all records concerning the nature and composition of injected fluids until three years after completion of any plugging and abandonment procedures. The commissioner may require the owner or operator to deliver the records to the Office of Conservation at the conclusion of the retention period.

d. All records shall be made available for review upon request from a representative of the commissioner.

13. Waiver of Requirements by Commissioner

a. When injection does not occur into, through, or above an underground source of drinking water, the commissioner may authorize a Class III well or project with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring, and reporting than required in this Subsection to the extent that the reduction in requirements will not result in an increased risk of movements of fluids into an underground source of drinking water.

b. When reducing requirements under this Section, the commissioner shall issue an order explaining the reasons for the action.

14. Additional Requirements. The commissioner may prescribe additional requirements for Class III wells or projects in order to protect USDWs.

C. Class IV Wells (Reserved)

D. Class V Wells

1. Applicability. This Subsection sets forth technical criteria and standards for the regulation of all underground injection practices not regulated in Subsections A, B, and C.

a. Generally, wells covered by this Subsection inject nonhazardous fluids into or above formations that contain underground sources of drinking water. It includes all wells listed in §103.C.5, but is not limited to those types of injection wells.

b. It also includes wells not covered in Class IV that inject radioactive materials listed in the Louisiana Radiation Regulations (October 20, 1980), Part D (Standards for Protection Against Radiation), Appendix A, Table II, Column 2.

2. Large-Capacity Cesspools

a. The permitting and construction start-up of new or converted large-capacity cesspools are prohibited on and after April 5, 2000.

b. Existing large-capacity cesspools that were in operation or were under construction before April 5, 2000, shall be permanently close by April 5, 2005.

3. Motor Vehicle Waste Disposal Wells

a. The permitting and construction start-up of new or converted motor vehicle waste disposal wells are prohibited on and after April 5, 2000.

b. Existing motor vehicle waste disposal wells that were in operation or were under construction before April 5, 2000, shall be permanently closed by January 1, 2005.

4. Well Abandonment (Closure). Before permanently closing a Class V well, the owner or operator shall submit to the commissioner a plan detailing the method and procedure for closure. The commissioner may either approve the plan or require the applicant to revise the plan. The closure plan shall include conditions to ensure that permanent closure will comply with the prohibition of fluid movement standard in §103.D by not allowing the movement of additional fluids into an underground source of drinking water or from one USDW to another.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D, 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 8:83 (February 1982), amended LR 11:640 (June 1985), LR 12:26 (January 1986), LR 27:1700 (October 2001).

§111. Permitting Process

A. Applicability. This Section contains procedures for issuing all UIC permits other than emergency (temporary) permits. UIC authorizations by rule are not permits and are covered by specific provisions in §103.E.

B. Application Submission and Review

1. Any person required to have a UIC permit shall submit an application to the Office of Conservation, UIC Section, as outlined in §105.

2. Check for completeness:

a. the commissioner shall not issue a permit before receiving an application form and any required supplemental information which are completed to his satisfaction;

b. each application for a permit submitted for a new UIC injection well will be reviewed for completeness by the commissioner and the applicant will be notified of the commissioner's decision within 30 days of its receipt. Each application for a permit submitted for an existing injection well will be reviewed for completeness and the applicant will be notified of the commissioner's decision within 60 days of receipt. Upon completing the review, the commissioner shall notify the applicant in writing whether the application is complete; and

c. for each application for a new Class I injection well or a new Class III well or project, the commissioner shall, no later than the date the application is ruled complete, prepare and mail to the applicant a project decision schedule. The schedule shall specify target dates by which the commissioner intends to:

i. prepare a draft permit;

ii. give public notice;

iii. complete the public comment period, including any public hearing; and

iv. issue a final permit.

3. Incomplete Applications

a. If the application is incomplete, the commissioner shall list in the notification in §111.B.2.b above, the information necessary to make the application complete. When the application is for an existing UIC injection well, the commissioner shall specify in the notice a date for submitting the necessary information. The commissioner shall notify the applicant that the application is complete upon receiving this information. The commissioner may request additional information from an applicant only when necessary to clarify, modify, or supplement previously submitted material. Requests for such additional information will not render an application incomplete.

b. If an applicant fails or refuses to correct deficiencies found in the application, the permit may be denied and, for existing wells, appropriate enforcement actions may be taken under the applicable statutory provision.

4. If the commissioner decides that a site visit is necessary for any reason in conjunction with the processing of an application, he shall notify the applicant, state the reason for the visit, and a date shall be scheduled.

C. Draft Permits

1. Once an application is complete, the commissioner shall prepare a draft permit or deny the application.

2. The applicant may appeal the decision to deny the application in a letter to the commissioner who may then call a public hearing through §111.G.1.

3. If the commissioner prepares a draft permit, it shall contain the following information where appropriate:

a. all conditions under §107 and §109;

b. all compliance schedules under §107.N; and

c. all monitoring requirements under applicable Paragraphs in §109.

4. All draft permits prepared under this Section may be accompanied by a fact sheet pursuant to §111.D, and shall be publicly noticed in accordance with §111.E, and made available for public comment pursuant to §111.F.

D. Fact Sheet

1. A fact sheet shall be prepared for every draft permit for all major UIC facilities or activities and for every draft permit which the commissioner finds is the subject of wide-spread public interest or raises major issues. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permits. The commissioner shall send this fact sheet to the applicant and, on request, to any other person.

2. The fact sheet shall include, when applicable:

a. a brief description of the type of facility or activity which is the subject of the draft permit;

b. the type and quantity of wastes, fluids, or pollutants which are proposed to be or are being injected;

c. a brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions;

d. reasons why any requested variances or alternatives to required standards do or do not appear justified;

e. a description of the procedures for reaching a final decision on the draft permit including:

i. the beginning and ending dates of the comment period under §111.F and the address where comments will be received;

ii. procedures for requesting a hearing and the nature of that hearing; and

iii. any other procedures by which the public may participate in the final decision;

f. name and telephone number of a person to contact for information.

3. A copy of the fact sheet shall be mailed to all persons identified in §111.E.3.a.i, ii, and iii.

E. Public Notice of Permit Actions and Public Comment Period

1. Scope

a. The commissioner shall give public notice that the following actions have occurred:

i. a draft permit has been prepared under §111.C; and

ii. a hearing has been scheduled under §111.G.

b. No public notice is required when a request for permit modification, revocation and reissuance, or termination is denied under §113. Written notice of that denial shall be given to the requester and to the permittee.

c. Public notices may describe more than one permit or permit action.

2. Timing

a. Public notice of the preparation of a draft permit required under §111.E.1 shall allow 30 days for public comment.

b. Public notice of a public hearing shall be given 30 days before the hearing. (Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined).

3. Methods. Public notice of activities described in §111.E.1.a shall be given by the following methods:

a. by mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this Section may waive his rights to receive notice for any classes and categories of permits):

i. the applicant;

ii. any other agency which the commissioner knows has issued or is required to issue a permit for the same facility or activity (including EPA);

iii. federal and state agencies with jurisdiction over fish, shellfish, and wildlife resources and over coastal zone management plans, the Advisory Council on Historic Preservation, the State Archeological Survey and Antiquities Commission, and other appropriate government authorities, including any affected states; and

iv. persons on a UIC mailing list.

b. for Class I permits, publication of a notice in a daily or weekly newspaper within the area affected by the facility or activity;

c. in a manner constituting legal notice to the public under state law; and

d. any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other form or medium to elicit public participation.

4. Contents

a. All Public Notices. Public notices issued under this Section shall contain the following information:

i. name and address of the Division of the Office of Conservation processing the permit action for which notice is being given;

ii. name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;

iii. a brief description of the business conducted at the facility or activity described in the permit application;

iv. name, address, and telephone number of a person from whom interested persons may obtain copies of the draft permit, and the fact sheet, and further information concerning the application;

v. a brief description of the comment procedures required by §111.F and the time and place of any hearing that will be held, including a brief statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision; and

vi. any additional information considered necessary or proper.

b. Public Notices for Hearings. In addition to the general public notice described in §111.E.4.a, the public notice of a hearing under §111.G shall contain the following information:

i. reference to the date of previous public notices relating to the permit;

ii. date, time, and place of the hearing; and

iii. a brief description of the nature and purpose of the hearing, including the applicable rules and procedures.

F. Public Comments and Requests for Public Hearings. During the public comment period provided under §111.G any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments shall be considered in making the final decision and shall be answered as provided in §111.H.

G. Public Hearings

1. The commissioner shall hold a public hearing whenever he finds, on the basis of requests, a significant degree of public interest in (a) draft permit(s). The commissioner also may hold a public hearing at his discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision. Public notice of the hearing shall be given as specified in §111.G.

2. Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. The public comment period under §111.G shall automatically be extended to the close of any public hearing under this Section. The hearing officer may also extend the comment period by so stating at the hearing.

3. A tape recording or written transcript of the hearing shall be made available to the public.

H. Response to Comments

1. At the time that any final permit is issued the commissioner shall issue a response to comments. This response shall:

a. specify which provisions; if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

b. briefly describe and respond to all significant comments on the draft permit or the permit application raised during the public comment period, or during any hearing.

2. The response to comments shall be available to the public.

I. Permit Issuance and Effective Date

1. After closure of the public comment period, including any public hearing, under §111.G on a draft permit, the commissioner shall issue a final permit decision within 30 days.

2. A final permit decision shall become effective on the date of issuance.

3. Approval or the granting of a permit to construct a Class I or III well shall be valid for a period of one year and if not begun in that time, the permit shall be null and void. The permittee may request an extension of this one-year requirement; however, the commissioner shall approve the request for extenuating circumstances only.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D, 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 8:83 (February 1982).

§113. Permit Modification, Revocation and Reissuance, Termination, Transfer or Renewal

A. Applicability. The rules of this Section set forth the standards and requirements for applications and actions concerning modification, revocation and reissuance, termination, transfer and renewal of permits.

B. Permit Actions

1. The permit may be modified, revoked and reissued, or terminated for cause.

2. The permittee shall furnish to the commissioner, within 30 days, any information which the commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or terminating a permit, or to determine compliance with the permit. The permittee shall also furnish to the commissioner, upon request, copies of records required to be kept by the permit.

3. The commissioner may, upon his own initiative or at the request of any interested person, review any permit to determine if cause exists to modify, revoke and reissue, or terminate the permit for the reasons specified in §113.C, D, and E. All requests shall be in writing and shall contain facts or reasons supporting the request.

4. If the commissioner decides the request is not justified, he shall send the person making the request a brief written response giving a reason for the decision. Denials of requests for modification, revocation and reissuance, or termination are not subject to public notice, comment, or hearings.

5. If the commissioner decides to modify or revoke and reissue a permit under §113.C, D, and E, he shall prepare a draft permit under §111.C incorporating the proposed changes. The commissioner may request additional information and, in the case of a modified permit, may require the submission of an updated permit application. In the case of revoked and reissued permits, the commissioner shall require, if necessary, the submission of a new application.

C. Modification or Revocation and Reissuance of Permits

1. The following are causes for modification and may be causes for revocation and reissuance of permits.

a. Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

b. Information. The commissioner has received information pertinent to the permit. Permits for Class I or V wells may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. For area or project permits (§109.B.11) cause shall include any information indicating that cumulative effects on the environment are unacceptable.

c. New Regulations

i. The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued and conformance with the changed standards or regulations is necessary for the protection of the health or safety of the public or the environment. Permits for Class I or V wells may be modified during their terms when:

(a). the permit condition requested to be modified was based on a promulgated regulation or guideline;

(b). there has been a revision, withdrawal, or modification of that portion of the regulation or guideline on which the permit condition was based; and

(c). a permittee requests modification within 90 days after *Louisiana Register* notice of the action on which the request is based.

ii. When standards or regulations on which the permit was based have been changed by withdrawal of standards or regulations or by promulgation of amended standards or regulations which impose less stringent requirements on the permitted activity or facility and the permittee requests to have permit conditions based on the withdrawn or revised standards or regulations deleted from his permit, the permit may be modified as a minor modification without providing for public comment.

iii. For judicial decisions, a court of competent jurisdiction has remanded and stayed Office of Conservation regulations or guidelines and all appeals have been exhausted, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee to have permit conditions based on the remanded or stayed standards or regulations deleted from his permit.

d. Compliance Schedules. The commissioner determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonable available remedy.

2. Causes for modification or revocation and reissuance. The following are causes to modify or, alternatively, revoke and reissue a permit:

a. cause exists for termination under §113.D, and the commissioner determines that modification or revocation and reissuance is appropriate; or

b. the commissioner has received notification of a proposed transfer of the permit and the transfer is determined not to be a minor modification (see §113.D.4). A permit may be modified to reflect a transfer after the effective date (§113.F.2.b) but will not be revoked and reissued after the effective date except upon the request of the new permittee.

3. Facility Siting. Suitability of an existing facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that continued operations at the site pose a threat to the health or safety of persons or the environment which was unknown at the time of permit issuance. A change of injection site or facility location may require modification or revocation and issuance as determined to be appropriate by the commissioner.

4. If a permit modification satisfies the criteria of this Section, a draft permit must be prepared and other applicable procedures must be followed.

D. Minor Modifications of Permits. Upon the consent of the permittee, the commissioner may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this Section without issuing a draft permit and providing for public comment. Minor modifications may only:

1. correct typographical errors;

2. require more frequent monitoring or reporting by the permittee;

3. change an interim compliance date in a schedule of compliance, provided the new date does not interfere with attainment of the final compliance date requirement;

4. allow for a change in ownership or operational control of a facility where the commissioner determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the commissioner (see §113.F);

5. change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the commissioner, would not interfere with the operation of the facility or its ability to meet conditions prescribed in the permit, and would not change its classification;

6. change construction requirements or plans approved by the commissioner provided that any such alteration shall comply with the requirements of this Section and §109. No such changes may be physically incorporated into construction of the well prior to approval; or

7. amend a plugging and abandonment plan which has been updated under §109.A.7.f.

E. Termination of Permits

1. The commissioner may terminate a permit during its term for the following causes:

a. noncompliance by the permittee with any condition of the permit;

b. the permittee's intentional failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or

c. a determination that the permitted activity endangers the health or safety of persons or the environment which activity cannot be regulated to acceptable levels by permit modification and can only be regulated to acceptable levels by permit termination.

2. If the commissioner decides to terminate a permit, he shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit which follows the same procedures as any draft permit prepared under §111.C.

3. The commissioner may alternatively decide to modify or revoke and reissue a permit for the causes in §113.E.1 (see §113.C.2.a).

F. Transfers of Permits

1. A permit may be transferred to a new owner or operator upon approval by the commissioner.

2. The current permittee shall submit an application for transfer at least 30 days before the proposed transfer date. The application shall contain the following:

a. name and address of the transferee;

b. date of proposed transfer; and

c. a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them. The agreement should also demonstrate to the satisfaction of the commissioner that the financial responsibility requirements of §107.C will be met by the new permittee.

3. If the commissioner does not notify the existing permittee and the proposed new permittee of his intent to modify or revoke and reissue the permit under §113.C.2.b the transfer is effective on the date specified in the agreement mentioned in §113.F.2.c.

4. If no agreement described in §113.F.2.c is provided, responsibility for compliance with the terms and conditions of the permit and liability for any violation will shift from the existing permittee to the new permittee on the date the transfer is approved.

5. If a person attempting to acquire a permit causes or allows operation of the facility before approval by the commissioner, it shall be considered a violation of these rules for operating without a permit or other authorization.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D, 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 8:83 (February 1982), amended LR 11:640 (June 1985).

§115. Emergency or Temporary Permits

A. Applicability. The provisions for this Section set the standards applicable to emergency or temporary permits for all Class I, III, IV, and V wells.

B. Coverage. Notwithstanding any other provision of this Section, the commissioner may temporarily permit a specific underground injection which has not otherwise been authorized by rule or permit if an imminent and substantial endangerment to the health of persons will result unless a temporary emergency permit is granted. The permittee need not comply with the provisions of the permit to the extent and for the duration that noncompliance is authorized in a temporary emergency permit.

C. Requirements for Issuance

1. Any temporary permit under this Section shall be for no longer term than required to prevent the hazard.

2. Notice of any temporary permit under this Section shall be published in accordance with §111.E within 10 days of the issuance of the permit.

3. The temporary permit under this Section may be either oral or written. If oral, it must be followed within five calendar days by a written temporary emergency permit.

4. The commissioner shall condition the temporary permit in any manner he determines is necessary to ensure that the injection will not result in the movement of fluids into an underground source of drinking water.

D. Duration

1. A temporary permit shall not exceed a maximum of 90 days.

2. That the rules and regulations provide for environmental safety, protection and nonendangerment of underground sources of drinking water.

AUTHORITY NOTE: Promulgated in accordance with R.22S. 30:1D, 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 8:83 (February 1982).

Title 43
NATURAL RESOURCES
Part XVII. Office of Conservation—Injection and Mining
Subpart 2. Statewide Order No. 29-N-2

Chapter 2. Class I Hazardous Waste Injection Wells

§201. Definitions

A. The following definitions apply to all regulations following hereafter. Terms not defined in this section have the meaning given by R.S. (1950) Title 30, Section 3:

Abandoned Well a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.

Act Part I, Chapter I of Title 30 of the Louisiana Revised Statutes.

Application the filing by a person on the Office of Conservation forms for applying for an underground injection permit, including any additions, revisions or modifications to the forms.

Aquifer a geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

Area of Review the area surrounding an injection well as described in §209.B.

Casing a metallic or nonmetallic tubing or pipe of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent water, gas or other fluid from entering the hole.

Catastrophic Collapse the sudden and utter failure of overlying *strata* caused by removal of underlying materials.

Cementing the operation whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing.

Cone of Influence that area around the well within which increased injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into an underground source of drinking water (USDW).

Confining Bed a body of impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers.

Confining Zone a geological formation, group of formations, or part of a formation that is capable of limiting fluid movements above an injection zone.

Contaminant any physical, chemical, biological, or radiological substance or matter in water.

Commissioner the Assistant Secretary of the Office of Conservation, Department of Natural Resources.

Disposal Well a well used for the disposal of waste into a subsurface stratum.

Drilling Mud heavy suspension used in a drilling an *injection well* introduced down the drill pipe and through the drill bit.

Effective Date the date that Statewide Order 29-N-2 is promulgated in accordance with the Louisiana Administrative Procedure Act.

Emergency Permit a UIC permit issued in accordance with §215.

Exempted Aquifer an aquifer or its portion that meets the criteria of the definition of *underground source of drinking water* but which has been exempted according to the procedures set forth in §203.F.

Existing Well a Class I hazardous waste injection well which was authorized prior to August 25, 1988, by the Louisiana Underground Injection Control Program or a well which has become a Class I well as a result of a change in the definition of the injected waste which would render the waste hazardous.

Experimental Technology a technology which has not been proven feasible under the conditions in which it is being tested.

Facility or Activity any facility or activity (including land or appurtenances thereto) that is subject to these regulations.

Fault a surface or zone of *rock* fracture along which there has been displacement. (Also see *transmissive fault or fracture*).

Flow Rate the volume per time unit given to the flow of fluid substance which emerged from an orifice, pump, turbine or passes along a conduit or channel.

Fluid any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas or any other form or state.

Formation a body of rock characterized by a degree of lithologic homogeneity which is prevailing, but not necessarily, tabular and is mappable on the earths surface or traceable in the subsurface.

Formation Fluid fluid present in a formation under natural conditions as opposed to introduced fluids, such as drilling muds.

Generator any person, by site location, whose act or process produces hazardous waste identified or listed in the Louisiana Hazardous Waste Management Program.

Ground Water water below the land surface in a zone of saturation.

Hazardous Waste a hazardous waste as defined in the Louisiana Hazardous Waste Management Program.

Hazardous Waste Management (HWM) Facility all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing or disposing of hazardous waste.

Injection Interval that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

Injection Well a well into which fluids are being injected other than fluids associated with active drilling operations.

Injection Zone a geological formation, group of formations or part of a formation receiving fluids through a well.

Ionizing Radiation any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter. It includes any or all of the following: alpha rays, beta rays, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles; but not sound or radio waves, or visible, infrared or ultraviolet light.

Lithology the description of rocks on the basis of their physical and chemical characteristics.

Major Facility any Class I hazardous waste injection well facility or activity.

Manifest the shipping document originated and signed by the generator which contains the information required by the Hazardous Waste Management Program.

New Well any Class I hazardous waste injection well which is not an existing well.

Owner or Operator the owner or operator of any facility or activity subject to regulation under the UIC program.

Packer a device lowered into a well to produce a fluid-tight seal within the casing.

Permit an authorization, license, or equivalent control document issued by the commissioner to implement the requirement of these regulations. Permit includes, but it is not limited to, area permits and emergency permits. Permit does not include UIC authorization by rule or any permit which has not yet been the subject of final agency action, such as a draft permit.

Person an individual, association, partnership, corporation, municipality, state or federal agency, or an agent or employee thereof.

Plugging the act or process of stopping the flow of water, oil or gas into or out of a formation through a borehole or well penetrating that formation.

Plugging Record a systematic listing of permanent or temporary abandonment of water, oil, gas, test, exploration, and waste injection wells.

Pressure the total load or force per unit area acting on a surface.

Project a group of wells in a single operation.

Public Water System a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves at least 25 individuals. Such term includes:

a. any collection, treatment, storage, and distinction facilities under control of the operator of such system and used primarily in connection with such system; and

b. any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system.

Radiation any electromagnetic or ionizing radiation including gamma rays and x-rays, alpha and beta particles, high-speed electrons, neutrons, protons and other nuclear particles: but not sound waves. Unless specifically stated otherwise, these regulations apply only to ionizing radiation.

Radioactive Material any material, whether solid, liquid, or gas, which emits radiation spontaneously.

Radioactive Waste any waste which contains *radioactive material* for which no use or reuse is intended and which is to be discarded.

RCRA the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (Pub. L. 94-580 as amended by Pub. L. 95-609, 42 U.S.C. 6901 et seq.).

Schedule of Compliance a schedule or remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the act and these regulations.

Site the land or water area where any facility or activity is physically located or conducted including adjacent land used in connection with the facility or activity.

Skin Effect the blockage or plugging of the well perforations or formation face from solids in the waste stream that results in increased injection pressures and can be measured by accepted engineering test procedures.

Sole or Principal Source Aquifer an aquifer which is the sole or principal drinking water source for an area and which, if contaminated, would create a significant hazard to public health.

State the state of Louisiana.

Stratum (plural *Strata*) a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.

Surface Casing the first string of casing to be installed in the well, excluding conductor casing.

Total Dissolved Solids the total dissolved filterable solids as determined by use of the method specified in the 14th edition, pp. 91-92, of "Standard Methods for the Examination of Water and Waste Water."

Transmissive Fault or Fracture a fault of fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

UIC the Louisiana State Underground Injection Control Program.

Underground Injection a well injection.

Underground Source of Drinking Water (USDW) an aquifer or its portion: which supplies any public water system or which contains a sufficient quantity of ground water to supply water system; and currently supplies drinking water for human consumption or contains fewer than 10,000 mg/1 total dissolved solids; and which is not an exempted aquifer.

USDW Underground Source of Drinking Water.

Well a bored, drilled or driven shaft, or a dug hole, whose depth is greater than the largest surface dimension.

Well Injection the subsurface emplacement of fluids through an injection well.

Well Plug a fluid tight seal installed in a borehole or well to prevent movement of fluids.

Well Stimulation several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected thus making it possible for wastewater to move more readily into the formation, and includes:

a. surging;

b. jetting;

c. blasting;

d. acidizing; or

e. hydraulic fracturing.

Workover to perform one or more of a variety of remedial operations on an injection well, such as cleaning, perforation, change tubing, deepening, squeezing, plugging back, etc.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 15:978 (November 1989).

§203. General Provisions

A. Applicability. The rules and regulations of this Section apply to all owners and operators of proposed and existing Class I hazardous waste injection wells in the state of Louisiana.

B. Prohibition of Unauthorized Injection. Any underground injection, except as authorized by a permit, is prohibited after the effective date of these regulations. Construction of any well required to have a permit under these regulations is prohibited until the permit has been issued.

C. Classification of Class I Wells

1. Class I Hazardous Waste Injection Wells. Wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to inject hazardous waste beneath the lowermost formation containing, within one-fourth mile radius of the well bore, an underground source of drinking water.

2. Class I Nonhazardous Waste Injection Wells. Other industrial and municipal disposal wells which inject fluids beneath the lowermost formation containing an underground source of drinking water within one-fourth mile radius of the well bore.

D. Prohibition of Movement of Fluid into Underground Sources of Drinking Water of Outside of the Approved Injection Zone

1. No authorization by permit shall allow the movement of fluid containing any contaminant into underground sources of drinking water or outside the injection zone. The applicant for a permit shall have the burden of showing that the requirements of this Paragraph are met.

2. For Class I hazardous waste injection wells, if any water quality monitoring indicates the movement of any contaminant into a USDW or outside of the injection zone, except as authorized under §209, the commissioner shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement. In the case of wells authorized by permit, these additional requirements shall be imposed by modifying the permit in accordance with §213.C, or the permit may be terminated under §213.E if the cause exists, or appropriate enforcement action may be taken if the permit has been violated.

3. Notwithstanding any other provision of §203.D, the commissioner may take emergency action upon receipt of information that a contaminant which is present in or likely to enter a public water supply or may present an imminent and substantial endangerment to the health or safety of persons, or may threaten oil or gas deposits.

E. Requirements for Commercial Wells Injecting Hazardous Waste Accompanied by a Manifest. All generators of hazardous waste, and owners or operators of all commercial hazardous waste management facilities, who

use any Class I hazardous waste injection well to inject hazardous waste shall comply with all the applicable requirements of the Louisiana Hazardous Waste Management program.

F. Identification of Underground Sources of Drinking Water and Exempted Aquifers

1. The commissioner may identify (by narrative description, illustrations, maps, or other means) and shall protect, except where exempted under §203.F.2, as an underground source of drinking water, all aquifers or parts of aquifers which meet the definition of an *underground source of drinking water*. Even if an aquifer has not been specifically identified by the commissioner, it is an underground source of drinking water if it meets the definition.

2. After notice and opportunity for a public hearing the commissioner may identify (by narrative description, illustrations, maps, or other means) and describe in geographic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite, all aquifers or parts thereof which the commissioner proposes to designate as exempted aquifers if they meet the following criteria:

a. the aquifer does not currently serve as a source of drinking water; and

b. the aquifer cannot now and will not in the future serve as a source of drinking water because:

i. it is mineral, hydrocarbon or geothermal energy producing or can be demonstrated by a permit applicant as part of a permit application for a Class III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible;

ii. it is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

iii. it is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

iv. it is located over a Class III well mining area subject to subsidence or catastrophic collapse; or

c. the total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/1 and it is not reasonably expected to supply a public water system.

AUTHORITY NOTE: Promulgated is accordance with R.S. 30:1D and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 15:978 (November 1989).

§205. Permit Application Requirements

A. Applicability. The rules and regulations of this Section apply to all Class I hazardous waste injection wells required to be filed with the Department of Natural Resources, Office of Conservation, for authorization under R.S. 1950 Title 30.

B. Application Required

1. Permit Application. New applicants, permittees with expiring permits, and any person required to have a permit shall complete, sign, and submit an application in triplicate to the commissioner as described in this Section.

2. Time to Apply. Any person who performs or proposes a Class I hazardous waste injection well for which a permit is or will be required shall submit an application to the commissioner a reasonable time before construction of the new well is expected to begin.

3. All applicants for a new Class I hazardous waste injection well shall comply with and submit to the commissioner, as part of the permit application, all the information listed in §205.A, B, C, D and E concerning new wells including those applicable amended portions of the aforementioned paragraphs as listed below. This information shall be submitted in conjunction with the appropriate application form.

4. For an existing Class I hazardous waste injection well, the applicant shall comply with and submit to the commissioner, as part of the permit application, all the information listed in §205.A, B, C, D and E concerning existing wells including those applicable amended portions of the aforementioned paragraphs as listed below except for those items of information which are current, accurate, and available in the existing permit file. This information shall be submitted in conjunction with the appropriate application form.

5. For both new and existing Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current and readily available to the commissioner and sufficiently identifiable to be retrieved.

C. Who Applies. It is the duty of the owner of a facility or activity to submit an application for permit. When a facility is owned by one person and operated by another, it is the operator's duty to obtain a permit.

D. Signature Requirements for Applications

1. All permit applications shall be signed as follows:

a. for a corporation: by a principal executive officer of at least the level of vice-president, or duly authorized representative of that person if the representative performs similar policy-making functions for the corporation. A person is a duly authorized representative only if:

i. the authorization is made in writing by a principal executive officer of at least the level of vice-president;

ii. the authorization specifies either an individual or a position have responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a name position); and

iii. the written authorization is submitted to the commissioner;

b. for partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

c. for a municipality, state, federal, or other public agency by either a principal executive officer or ranking elected official.

2. If an authorization under §205.D.1 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the signature requirements must be submitted to the commissioner prior to or together with any reports, information or applications to be signed by an authorized representative.

3. Certification. Any person signing a document under §205.D shall make the following certification:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

4. Any permit application for a Class I hazardous waste injection well for disposal on the premises where the waste is generated shall contain a certification by the owner or operator that:

a. the generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

b. injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

E. Application Contents for Class I Hazardous Waste Injection Wells. All applicants for Class I hazardous waste injection well permits shall provide the following information to the commissioner, using the application form provided:

1. administrative information:

a. the name, mailing address, and location of the facility for which the application is submitted;

b. ownership status as federal, state, private, public, or other entity;

c. the operator's name, address and telephone number;

d. a brief description of the nature of the business associated with the facility;

e. the activity or activities conducted by the applicant which require the application to obtain a permit under these regulations;

f. up to four SIC Codes which best reflect the principle products or services provided by the facility;

g. a listing of all permits or construction approvals which the applicant has received or applied for under any of the following programs and which specifically affect the legal or technical ability of the applicant to undertake the activity or activities to be conducted under the permit filed herefor:

i. the Louisiana Hazardous Waste Management Program;

ii. this or any other Underground Injection Control Program;

iii. NPDES Program under the Clean Water Act;

iv. Prevention of Significant Deterioration (PSD) Program under the Clean Air Act;

v. Nonattainment Program under the Clean Air Act;

vi. National Emission Standards for Hazardous Pollutants (NESHAPS) Preconstruction approval under the Clean Air Act;

vii. Ocean Dumping Permit under the Marine Protection Research and Sanctuaries Act;

viii. Dredge or Fill Permits under Section 404 of the Clean Water Act; and

ix. other relevant Environmental Permits, including but not limited to any state permits issued under the Louisiana Coastal Resources Program, the Louisiana Surface Mining Program or the Louisiana Natural and Scenic Streams System;

h. jurisdiction:

i. whether the facility is located on Indian lands or other lands under the jurisdiction or protection of the federal government;

ii. whether the facility is located on state waterbottoms or other lands owned by or under the jurisdiction or protection of the state;

i. describe the waste to be injected along with its corresponding EPA Hazardous Waste Code Number.

2. Maps and Related Information for New and Existing Wells

a. One or more maps, preferably USGS topographic map(s), with a scale of 1:24,000 showing the property boundaries of the facility, each injection well for which a permit is sought and the area of review as described in §209.B.

i. The map(s) must show the section, township and range of the area in which the activity is located and any parish, city or municipality boundary lines within one mile of the injection well.

ii. Within the area of review the map(s) must show the name and/or number and location of all injection wells, producing wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, public water systems, water wells (public and private) and other pertinent surface features including residences and roads.

iii. The map(s) should also show faults if known or projected.

iv. Only information of public record is required to be included on the map(s): however, the applicant is required to undertake a diligent search to locate all water wells not listed in the public record.

v. For water wells on the facility property and adjacent property, submit a tabulation of well depth, water level, owner, chemical analysis, and other pertinent data. If these wells do not exist, submit this information for a minimum of three other wells in the area of review or a statement why this information was not included.

vi. The protocol followed to identify, locate, and ascertain the condition of all wells within the area of review which penetrate the injection or confining zone.

b. Generalized maps and cross-sections illustrating the regional geology and hydrology.

c. Maps and cross-sections to the necessary scale to detail the local geology and hydrology (two-mile radius of well minimum).

d. Maps and cross-sections indicating the general vertical and lateral limits of all underground sources of drinking water (USDW) within the area of review, their position relative to the injection formation and the direction of water movement, if known, in each aquifer containing a USDW which may be effected by the proposed injection.

e. In areas with limited subsurface well control or where the subsurface geology is in doubt and cannot be adequately described by conventional methods, the commissioner may request an applicant to provide geophysical seismic data to reenforce the geologic interpretation.

f. Any other information required by the commissioner to evaluate the proposed well.

3. Technical Information for New Wells

a. A tabulation on all wells within the area of review which penetrate the proposed injection zone or confining zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion and any additional information the commissioner may require. For wells within a one-half mile radius of the injection well, include:

i. copies of all casing and cementing records (including cementing affidavits);

ii. copies of plugging and/or completion records; and

iii. schematic diagrams of each well;

b. proposed operating data:

i. average and maximum daily rate and volume of the injection fluids;

ii. average and maximum injection pressure; and

iii. source and an analysis of the chemical, physical, and biological characteristics of the injection fluid;

c. proposed formation testing program to obtain an analysis of the chemical, physical, and radiological characteristics of and other information on the injection and the confining zone;

d. proposed stimulation program;

e. proposed injection procedures (including storage and pre-injection treatment of the waste stream, and well use schedule);

f. schematic or other appropriate drawings of the surface (well-head and related appurtenances) and subsurface construction details of the system;

g. plans (including maps) for meeting the monitoring requirements of §209.1;

h. construction procedures including a cementing and casing program (include cementer's recommendation), well material specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing, and coring program;

i. contingency plans to cope with all shut-ins or well failures so as to prevent the migration of the contaminating fluids into underground sources of drinking water;

j. a certificate that the applicant has assured, through a performance bond or other appropriate means, the resources necessary to close, plug or abandon the well and for post-closure care as required in §§207.C and 209.O;

k. for wells within the area of review which penetrate the injection zone of the confining zone but are not properly completed or plugged, the corrective action proposed to be taken under §209.C;

l. calculation of the pressure increase in the proposed injection zone for a time period equal to the expected life of the well, preferably using Matthews and Russell, 1967 ('Pressure Buildup and Flow Tests in Wells', American Institute of Mining, Met. Eng. Monograph, Vol. 1);

m. calculation of the expected waste front travel using a model acceptable to the commissioner. A conservative value can be calculated by using the following formula:

$$r = \sqrt{\frac{v}{\pi b \phi}}$$

where:

r = radial distance of wastewater front from well

v = cumulative volume of injected wastewater

b = effective reservoir thickness

ø = average effective porosity

(Warner, D.L. and Lehr, J.H., 'An Introduction to the Technology of Subsurface Wastewater Injection', Robert S. Kerr Environmental Research Laboratory (EPA) Research Report, 1977);

n. information required under §§209.L.1 and M.1 concerning the applicant's plans for closure (plug and abandonment) and post-closure care of the well; and

o. any other information required by the commissioner to evaluate the proposed well.

4. Technical information for existing wells:

a. a tabulation of data on all wells within the area of review which penetrate the injection zone (see §205.E.3.a);

b. operating data as required in §205.E.3.b;

c. formation testing results if performed prior to well operation;

d. stimulation program;

e. description of injection procedures (including storage and pre-injection treatment of the waste stream and well use schedule);

f. schematic or other appropriate drawings of the surface (well-head and related appurtenances) and subsurface construction details of the system;

g. monitoring equipment as required in §209;

h. contingency plans as required in §205.E.3.i;

i. a demonstration of the resources for closure and post-closure as required in §205.E.3.j;

j. proposed corrective action as required in §205.E.3.k;

k. calculation of the pressure increase in the injection zone as required in §205.E.3.1;

l. calculation of the waste front travel as required in §205.E.3.m;

m. measurement of bottom hole pressure and temperature at the time of repermitting or during the next workover operation;

n. a graphic presentation of the well's operational history consisting of the following:

i. a plot of representative values of injection pressure and injection rate versus time, from date of initial injection to the present (indicate cumulative volume);

ii. a plot of measured bottom-hole pressure versus date if such measurements were made;

iii. indications of any workovers and associated problems, stimulations, waste stream changes and other events that would have a bearing on the well's performance, especially:

(a) any change of injection interval; and

(b) any other information the permittee or commissioner may consider useful;

o. copies of all logs and tests run during construction and subsequent operation of the well, including mechanical integrity tests;

p. a summary analysis of the data provided in §205.E.4.o;

q. plans for closure and post-closure required in §205.E.3.n; and

r. any other information required by the commissioner to evaluate the existing well.

F. Recordkeeping of Application Information. The applicant shall retain records of all pertinent data used to complete the permit application and any supplemental information submitted under these regulations for a period of three years following well closure or until the time of next repermitting, whichever is less.

G. Confidentiality of Information. Information obtained by any rule, regulations, order, or permit term or condition adopted or issued here-under, or by any investigation authorized thereby, shall be available to the public, unless nondisclosure is requested in writing and such information is determined by the commissioner to require confidentiality to protect trade secrets, processes, operations, style of work, apparatus, statistical data, income, profits, losses, or in order to protect any plan, process, tool, mechanism, or compound: provided that such nondisclosure shall not apply to information that is necessary for use by duly authorized officers or employees of state or federal government in carrying out their responsibilities under these regulations or applicable federal or state law. If no claim is made at the time of submission, the commissioner may make the information available to the public without further notice. Claims of confidentiality for the following information will be denied:

1. the name and address of any permit applicant or permittee; and

2. information which deals with the existence, absence, or level of contaminants in drinking water or zones other than the approved injection zone.

H. Filing Fee. Each application shall be accompanied by a filing fee established by Statewide Order 29-Q as amended, or subsequent applicable regulations.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 15:978 (November 1989).

§207. Legal Permit Conditions

A. Applicability. The rules and regulations of this Section set forth legal conditions for all Class I hazardous waste injection well permits.

B. Signatories. All reports required by permits and other information requested by the commissioner shall be signed as in applications by a person described in §205.D.

C. Financial Responsibility. The permit shall require the permittee to maintain financial responsibility and resources to close, plug and abandon and for post-closure care of the Class I hazardous waste injection wells in a manner

prescribed by the commissioner. The permittee must show evidence of financial responsibility to the commissioner by the submission or a surety bond, or other adequate assurance, such as financial statements or other materials acceptable to the commissioner (see §209.O).

D. Duty to Comply. The permittee must comply with all conditions of a permit. Any permit noncompliance constitutes a violation of the act and is grounds for enforcement action, or permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application if the commissioner determines that such noncompliance endangers underground sources of drinking water. The permittee need not comply with the provisions of his permit to the extent and for the duration such noncompliance is authorized in an (temporary) emergency permit under §215.

E. Duty to Reapply. If the permittee wishes to continue an activity regulated by permit after the expiration date of the permit, the permittee must apply for and obtain a new permit.

F. Duty to Halt or Reduce Activity. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

G. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment such as the contamination of underground sources of drinking water or zones outside of the approved injection zone resulting from noncompliance with this permit.

H. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of his permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operation staffing and training, and adequate laboratory process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

I. Inspection and Entry. Inspection and entry shall be allowed as prescribed in R.S. of 1950, Title 30, Section 4.

J. Compliance. Compliance with a permit during its term constitutes compliance, for purposes of enforcement, with the act and these regulations.

K. Property Rights. The issuance of a permit does not convey any property rights or any sort, or any exclusive privilege or servitude.

L. Notification Requirements

1. Planned Changes. The permittee shall give notice to the commissioner as soon as possible of any planned physical alterations or additions to the permitted facility which may constitute a major modification of the permit.

2. Notice of Well Completion

a. A new Class I hazardous waste injection well may not commence injection until construction is complete, a notice of completion has been submitted to the commissioner and the commissioner has inspected or otherwise reviewed the injection well and finds it is in compliance with the conditions of the permit.

b. The commissioner shall inspect the well within 10 working days of the notice of completion required in §207.L.2.a.

c. If the permittee has not received notice from the commissioner of his intent to inspect or review the well or if the commissioner has not inspected or otherwise reviewed the new Class I hazardous waste injection well within 10 working days of the notice of completion in §207.L.2.a, prior inspection or review is waived and the permittee may commence injection.

3. Anticipated Noncompliance. The permittee shall give advance notice to the commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

4. Transfers. A permit is not transferable to any person except after notice to the commissioner. The commissioner may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary (see §213).

5. Compliance Schedules. Report of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in these regulations shall be submitted to the commissioner no later than 14 days following each schedule date.

6. Twenty-Four Hour Reporting

a. The permittee shall report to the commissioner any noncompliance which may endanger health or the environment. Any information pertinent to the noncompliance shall be reported by telephone within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances and shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or plannned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following additional information must be reported within the 24-hour period provided above:

i. any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW or zone outside of the injection zone;

ii. any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDW's or outside of the injection zone.

7. The permittee shall notify the commissioner at such times as the permit requires before abandonment of the Class I hazardous waste injection well (see §209.L.2).

8. Other Noncompliance. The permittee shall report all instances of noncompliance not reported under §207.L.5 and 6 at the time quarterly reports are submitted. The reports shall contain the information listed in §207.L.6.

9. Other Information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the commissioner, it shall promptly submit such facts or information.

M. Duration of Permits

1. Permits for the operation of a Class I hazardous waste injection well shall be effective for a fixed term not to exceed ten years (see §211.I.3).

2. The term of a permit shall not be extended by modification beyond the maximum duration specified in this Subsection.

3. The commissioner may issue, for cause, any permit for duration that is less than the full allowable term under this Subsection.

N. Schedules of Compliance. The permit may, when appropriate, specify a schedule of compliance leading to compliance with the act and these regulations.

1. Time for Compliance. Any schedules of compliance under this Subsection shall require compliance as soon as possible but not later than two years after the effective date of the permit.

2. Interim Dates. Except as provided in Paragraph 2.b of this Subsection, if a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

a. The time between interim dates shall not exceed one year.

b. If the time necessary for completion of any interim requirements (such as the construction of a control facility) is more than one year and is not readily divisible into stages for completion, the permit shall specify interim dates for submission of reports of progress toward completion or the interim requirements and indicate a projected completion date.

3. Reporting. The permit shall be written to require that progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

O. Additional Conditions. The commissioner shall impose on a case-by-case basis such additional conditions as are necessary to protect underground sources of drinking water.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 15:978 (November 1989).

§209. Technical Criteria and Standards

A. Applicability. This Section establishes technical criteria and standards for the regulation of Class I hazardous waste injection wells.

B. Area of Review

1. The area of review for each Class I hazardous waste injection well shall be a fixed radius of no less than two miles around the well or shall be determined by the calculated cone of influence of the well, whichever is greater.

2. All known unplugged, improperly plugged and abandoned, or improperly constructed wells in the area of review which penetrate the confining of injection zone are subject to the corrective action requirements of §209.C.

C. Corrective Action

1. Coverage. Applicants for Class 1 hazardous waste injection well permits shall submit a plan outlining the protocol used to:

a. identify all wells which penetrate the confining or injection zone within the area of review; and

b. determine whether these wells are adequately completed or plugged.

2. Applicants for Class I hazardous waste injection well permits shall identify the location of all wells within the area of review that penetrate the injection or confining zone and shall submit as required in §205.E.2, 3, and 4:

a. a tabulation of all wells within the area of review that penetrate the injection or the confining zone; and

b. a description of each well or type of well and any records of its plugging or completion.

3. For wells determined to be improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluids into or between underground sources of drinking water or outside of the injection zone. Where the plan is adequate, the commissioner shall incorporate it into the permit as a condition. Where the commissioner's review of the application indicates that the permittee's plan is inadequate (based at a minimum on the factors in §209.C.5), the commissioner shall:

a. require the applicant to revise the plan;

b. prescribe a plan for the corrective action as a condition of the permit; or

c. deny the application.

4. Requirements

a. Existing Injection Wells. Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations shall include a compliance schedule requiring any corrective action

accepted or prescribed under §209.C.3. Any such compliance schedule shall provide for compliance as soon as possible but not later than two years following issuance of the permit. It shall also require observance of appropriate pressure limitations under §209.C.4.c until all other corrective action measures have been implemented.

b. New Injection Wells. No permit for any Class I hazardous waste injection well may authorize injection until all corrective actions required under this Section have been taken.

c. Injection Pressure Limitations. The commissioner may require pressure limitations in lieu of plugging. If so, then the commissioner shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between USDW's or outside of the injection zone. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be made part of a compliance schedule and last until all other corrective actions have been implemented.

5. In determining the adequacy of corrective action proposed by the applicant under §209.C.3 and in determining the additional steps needed to prevent fluid movement into and between USDW's or outside of the injection zone, the following criteria and factors shall be considered by the commissioner:

a. nature and volume of the injected fluids;

b. nature of native fluids or by-products of injection;

c. geology;

d. hydrology;

e. potentially affected population;

f. history of the injection operation;

g. completion and plugging records;

h. closure procedures in effect at the time the well was closed;

i. hydraulic connections with USDW's or zones outside of the injection zone;

j. reliability of the procedures used to identify abandoned wells;

k. any other factors which might affect the movement of fluids into or between USDW's or outside of the injection zone.

D. Minimum Criteria for Siting

1. All Class I hazardous waste injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the wellbore an underground source of drinking water (USDW).

2. The siting of Class I hazardous waste injection wells shall be limited to areas that are geologically suitable. The commissioner shall determine geologic suitability based upon:

a. an analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

b. an analysis of the local geology and hydrogeology of the well site, including at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics and mineral resources; and

c. a determination that the geology of the area can be described confidently and that the limits of waste fate and transport can be accurately predicted through the use of models.

3. Class I hazardous waste injection wells shall be sited such that:

a. the injection zone has sufficient permeability, porosity, thickness, and a real extent to prevent migration of fluids into USDW's or outside of the injection zone;

b. the confining zone:

i. is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into USDW or outside the injection zone; and

ii. contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.

4. The owner or operator shall demonstrate to the satisfaction of the commissioner that:

a. the confining zone is separated from the base of the lower-most USDW by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for the USDW in the event of fluid movement in an unlocated borehole or transmissive fault; or

b. within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lower-most USDW, considering density effects, injection pressures and any significant pumping in the overlying USDW; or

c. there is no USDW present;

d. the commissioner may approve a site which does not meet the requirements in §209.D.4.a, b or c if the applicant can demonstrate to the commissioner that because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of USDW's.

E. Construction Requirements

1. General. All existing and new Class I hazardous waste injection wells shall be constructed and completed to:

a. prevent the movement of fluids into or between USDW's or into any unauthorized zones;

b. permit the use of appropriate testing devices and workover tools; and

c. permit continuous monitoring of injection tubing and long string casing as required pursuant to §209.H.10.

2. Compatibility. All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceeds standards developed for such materials by the American Petroleum Institute, The American Society for Testing Materials, or comparable standards acceptable to the commissioner.

3. Casing and Cementing of New Wells

a. Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The casing and cementing program shall be designed to prevent the movement of fluids into or between USDW's, or outside the injection zone, and to prevent potential leaks of fluids from the well. In determining and specifying casing and cementing requirements, the commissioner shall consider the following information as required by §205.E:

i. depth to the injection zone;

ii. injection pressure, external and internal pressure, and axial loading;

iii. hole size;

iv. size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);

v. corrosiveness of injected fluid, formation fluids, and temperature;

vi. lithology of injection and confining zones;

vii. type or class of cement including slurry weight (lb/gal) and yield (cu. ft./sack); and

viii. quantity and chemical composition of injected fluid.

b. One surface casing string shall, at a minimum, extend into the confining bed below the lowest formation that contains a USDW and be cemented by circulating cement from the base of the casing to the surface, using a minimum of 150 percent of the calculated annular volume. The commissioner may require more than 150 percent when it is warranted by the geology or by other circumstances.

c. At least one long string casing and/or intermediate casing string, using a sufficient number of centralizers, shall be utilized in the well. If either casing string is to be perforated, then the approved casing shall extend through the base of the injection zone. If an approved alternate construction method is used, such as the setting of a screen, the casing shall be set to the top of the injection interval. Regardless of the construction method utilized, the casing strings shall be cemented by circulating cement from the casing shoe to the surface in one or more stages:

i. of sufficient quantity and quality to withstand the maximum operating pressure; and

ii. in a quantity no less than 120 percent of the calculated volume necessary to fill the annular space. The commissioner may require more than 120 percent when it is warranted by the geology or other circumstances.

d. Circulation of cement may be accomplished by staging. The commissioner may approve an alternative method of cementing in cases where the cement cannot be circulated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous across and sufficiently above the injection zone so as to provide for zonal isolation and does not allow fluid movement behind the casing.

e. Casing, including any casing connections, must be rated to have sufficient structural strength to withstand, for the design life of the well, the maximum burst and collapse pressures and the maximum tensile stress which may be experienced during the construction, operation, and closure of the well.

f. At a minimum, cement and cement additives must be of sufficient quality and quantity to maintain integrity over the design life of the well.

4. Tubing and Packer

a. All Class I hazardous waste injection wells, except as in §209.E.4.d below, shall inject fluids through tubing with a packer set at a depth specified by the commissioner. Where multiple injection intervals exist, the packer setting depth will be as close as practicable to the top of the primary injection interval. The commissioner shall have the authority to adjust the packer setting depth as required on a case-by-case basis.

b. In determining and specifying requirements for tubing and packer, the following factors shall be considered:

i. depth of setting;

ii. characteristics of injection fluid (chemical content, corrosiveness, temperature, and density);

iii. injection pressure;

iv. annular pressure;

v. rate (intermittent or continuous), temperature, and volume of injected fluids;

vi. size of casing; and

vii. tubing tensile, burst, and collapse strengths.

c. A corrosion resistant or noncorrosive fluid shall be placed under pressure into the tubing/long string casing annulus. The annulus pressure shall be monitored in accordance with §209.H.9 and 10.

d. The commissioner may approve the use of a fluid seal system as an alternative to a mechanical packer if he determines that the following conditions are met:

i. the operator demonstrates that the seal will provide a level of protection comparable to a packer;

ii. the operators staff is, and will remain, adequately trained to operate and maintain the well and to identify and interpret variations in parameters of concern;

iii. the permit contains specific limitations on variations in annular pressure and loss of annular fluid;

iv. the design and construction of the well allows continuous monitoring of the annular pressure and mass balance of annular fluid; and

v. a secondary system is used to monitor the interface between the injection fluid and the annulus fluid and the permit contains requirements for testing the system every three months and recording the results with the submission of the appropriate quarterly report.

5. Disposal of Drill Material. The subsurface material (cuttings) such as sand, clay, shale, etc. removed from the wellbore during the drilling of a Class I hazardous waste injection well may be disposed at a properly permitted municipal landfill or a hazardous waste landfill provided the disposal of such material at such facilities complies with all applicable regulations.

F. Logging, Testing and Sampling Prior to New Well Operation

1. During the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests shall be run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in all relevant geologic units to assure conformance with performance standards in §209.E, and to establish accurate baseline data against which future measurements may be compared. A descriptive report interpreting results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the commissioner as part of the completion report described in §209.G.1. At a minimum, such logs and tests shall include:

a. deviation checks during drilling on all holes constructed by drilling a pilot hole which are enlarged by reaming or another method. Such checks shall be at sufficient frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

b. such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise from time to time as the construction of the well progresses. At a minimum, the following logs shall be required in the following situations:

i. for surface casing:

(a) spontaneous potential, resistivity or gamma-resistivity, and caliper logs before casing is installed; and

(b) a cement bond and variable density log, and a temperature log after casing is set and cemented;

ii. for intermediate and long string casing:

(a) resistivity, spontaneous potential, gamma-ray, porosity, caliper and fracture finder logs before the casing is installed; and

(b) a cement bond and variable density log, and a temperature log after the casing is cemented;

iii. the commissioner may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information, and:

(a) all casing strings shall be pressure tested at conditions specified by the commissioner and reported on the appropriate form; and

(b) a mechanical integrity test consisting of:

(i). a pressure test with liquid or gas;

(ii). a radioactive tracer survey;

(iii). a temperature or noise log;

(iv). a casing inspection log, if required by the commissioner; and

(v). any other test required by the commissioner.

2. Whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone shall be taken. Cores from nearby wells may be accepted if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of the conditions at the well. The commissioner may require coring of other formations in the borehole.

3. The fluid temperature, pH, conductivity, pressure, and the static fluid level of the injection zone must be recorded.

4. At a minimum, the following information concerning the injection and confining zones shall be determined or calculated for Class I hazardous waste injection wells:

a. fracture pressure;

b. other physical and chemical characteristics of the formation fluids in the injection zone; and

c. physical and chemical characteristics of the confining and injection zones.

5. Upon completion, but prior to operation, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

a. a pump test; or

b. injectivity tests.

6. The commissioner shall have the opportunity to witness all logging and testing required by §209.F. The owner or operator shall submit a schedule of such activities to the commissioner 30 days prior to conducting the first test.

7. Construction Supervision. All phases of well construction and any well workover shall be supervised by a person who is knowledgeable and experienced in practical drilling engineering and who is familiar with the special conditions and requirements of injection well construction.

G. Pre-Operation Requirements. Prior to the commissioner granting final approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit the following information to the commissioner for review and approval.

1. A completion report containing at a minimum:

a. the drilling and complete and accurate record of the depth, thickness, and character of the strata penetrated;

b. casing and cement records;

c. all available logs and testing program data on the well and a descriptive report interpreting the results of all logs and tests;

d. measured bottomhole temperature and pressure;

e. a demonstration of mechanical integrity pursuant to §209.F.1.d;

f. the results of the injection zone and confining zone testing program as required in §205.E.3.c;

g. compatibility of the injected waste with fluids in the injection zone and minerals in both the injection zone and confining zone and with the materials used to construct the well;

h. core sample testing results;

i. injectivity test data;

j. the anticipated maximum pressure and flow rate under which the well will operate;

k. the actual injection procedure;

l. revised calculated area of review based on data obtained during logging and testing of the well and formation, and where necessary revisions to the information submitted under §205.E.2.a.ii and E.3.a;

m. revised formation pressure build-up calculation, §205.E.3.1;

n. revised waste front travel calculation, §205.E.3.m;

o. revised maps and cross sections of the injection zone using pertinent data above;

p. the status of corrective action on wells identified under §205.E.3.k;

q. as built diagram of the well with construction information;

r. submit a certified location plat indicating the surveyed surface and bottom-hole location of the well, the latitude and longitude as well as the Lambert (X-Y) coordinates of the surface and bottom-hole. Also include the directional survey and directional profile drawing of the well.

2. For all Class I injection wells, file one copy of the permit in the conveyance records of the parish courthouse where the well is located. Within 15 days from the date of filing, forward a certified copy of the permit with recording references to the division within the Office of Conservation that issued the permit.

3. For all Class I injection wells, written notification that a copy of the permit has been filed with the appropriate oil and gas regulatory division within the Office of Conservation.

4. Compliance with all pre-operating terms of the permit must occur and approval to commence operation must be received from the commissioner prior to beginning injection operations (see §207.L).

5. The commissioner may give permission to commence injection for an interim period not to exceed 30 calendar days following the inspection required in §207.L.2.b. Final permission to inject will be given only upon receipt and approval of the completion report required in §209.G.1.

H. Operating Requirements

1. Except during well stimulation, the injection pressure at the wellhead shall not exceed the calculated maximum surface injection pressure (MSIP) so as to assure that the pressure in the injection zone during injection operations will not initiate new fractures or propagate existing fractures in the injection or confining zone nor cause the movement of injection or formation fluids into USDW or outside the injection zone. The MSIP shall be calculated by using the following formula.

$$MSIP = 0.85 (BHP_F - H) + TF + SE$$

where:

BHP_F = bottom-hole fracture pressure established by gradients for the area the well is located in or actual testing.

H = hydrostatic pressure.

TF = frictional loss in the tubing during maximum injection rate.

SE = skin effects as established by accepted engineering test procedures as described in "Pressure Buildup and Flow Tests in Wells", by C.S. Matthews and D G. Russell or approved alternate tests (optional variable).

2. Injection between the outermost casing protecting USDW's and the wellbore is prohibited.

3. The owner or operator shall maintain an annulus pressure that exceeds the operating injection pressure, unless the commissioner determines that such a requirement might harm the integrity of the well. The fluid in the annulus shall be noncorrosive or contain a corrosion inhibitor.

4. A protective barrier shall be maintained around the wellhead and related appurtenances during all normal in-service and out-of-service periods for protection against mechanical damage.

5. A sign shall be maintained on the protective barrier of each injection well identifying the well class and type, well name and number, Serial Number, section-township-range, and any other information required by the commissioner.

6. The owner or operator shall maintain mechanical integrity of the well at all times. Integrity shall be demonstrated and reported according to the procedures and at the frequency specified in §209.I.

7. Approval by the commissioner must be obtained before conducting any workover operations on the well (see §209.J.2). All fluids and materials (sand, etc.) removed from the well during workovers shall be contained and disposed of properly.

8. Permit requirements for owners or operators of hazardous waste wells which inject wastes that have the potential to react with the injection formation to generate gases shall include:

a. conditions limiting the temperature, pH or acidity of the injected waste; and

b. procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

9. Pressure gauges shall be installed at the wellhead and properly maintained which will indicate the pressure on the injection tubing and on the tubing-casing annulus.

10. The owner or operator shall install, use, and maintain in proper operating condition continuous recording devices to monitor injection pressure, flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the injection tubing and the long string casing, and any other specified data. The instruments shall be housed in weatherproof enclosures.

11. The owner or operator shall install, use, and maintain in proper operating condition:

a. automatic alarm and automatic shut-off systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the commissioner exceed a range and/or gradient specified in the permit; or

b. automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the commissioner exceed a rate and/or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on site at all times when the well is operating.

12. If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the alarm or shutoff. If upon such investigation the well appears to be lacking mechanical integrity or if the monitoring required under §209.H.10 of this Section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

a. cease injection of waste fluids unless authorized by the commissioner to continue or resume injection;

b. take all necessary steps to determine the presence or absence of a leak; and

c. notify the commissioner within 24 hours after the alarm or shutdown in person or by telephone as required in §207.L.6.

13. If a loss of mechanical integrity is discovered pursuant to Paragraph 12 of this Subsection or during periodic mechanical integrity testing, the owner or operator shall:

a. immediately cease injection of waste fluids;

b. take all steps reasonably necessary to determine whether there may have been a release of hazardous waste constituents into any unauthorized zone;

c. notify the commissioner within 24 hours as in §209.H.12.c after loss of mechanical integrity is discovered;

d. notify the commissioner when injection can be resumed; and

e. restore and demonstrate mechanical integrity to the satisfaction of the commissioner prior to resumption of injection operations.

14. Whenever the owner or operator obtains evidence that there may have been a release of injected waste into an unauthorized zone, immediately cease injection of waste fluids, and:

a. notify the commissioner within 24 hours of obtaining such evidence as in §209.H.12.c;

b. take all necessary steps to identify and characterize the extent of any release;

c. comply with and implement any remediation plan specified and approved by the commissioner; and

d. where such release is into a USDW currently serving as a water supply, place a notice in the official parish journal where the facility is located and the official state journal; notify local governing authorities in the affected area, all water well users within two miles of the release, and the Secretary of the Department of Environmental Quality.

15. Where there is evidence that there may have been a release of injected waste into an unauthorized zone, the commissioner may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger USDW's or allow the movement of fluids outside the injection zone.

I. Testing and Monitoring Requirements. Samples and measurements taken for the purposes of testing and monitoring shall be representative of the monitored activity and shall include at a minimum:

1. Monitoring of the Injected Waste

a. The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum the plan shall specify:

i. the parameters for which the waste will be analyzed and the rationale for the selection of these parameters;

ii. the test methods that will be used to test for these parameters;

iii. the sampling method that will be used to obtain a representative sample of the waste being analyzed;

iv. the date, exact place and time of sampling or measurement;

v. the individual(s) who performed the sampling or measurement;

vi. the date(s) analyses were performed;

vii. the individual(s) who performed the analyses; and

viii. the results of such analyses.

b. The analysis of the injected waste as described in the waste analysis plan shall be repeated at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

c. The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the commissioner.

d. The owner or operator shall assure that the plan remains accurate and the analysis remain representative.

2. Hydrogeologic Compatibility Determination. The owner or operator shall submit information demonstrating to the satisfaction of the commissioner that the waste stream and its anticipated reaction products will not alter the permeability, thickness or other relevant characteristics of the confining or injection zone such that they would no longer meet the requirements specified in §209.D.

3. Compatibility of Well Materials

a. The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submit to the commissioner a description of the methodology used to make that determination. Compatibility for the purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under §209.E.2.

b. The commissioner shall require continuous corrosion monitoring of the construction materials used in the well for wells injection corrosive waste, and may require such monitoring for other waste by:

i. placing coupons of the well construction materials in contact with the waste stream; or

ii. routing the waste stream through a loop constructed with the material used in the well; or

iii. using an alternative method approved by the commissioner.

c. If a corrosion monitoring program is required:

i. the test shall use materials identical to those used in the construction of the well, and such materials must be continuously exposed to the operating pressures and temperatures (measured at the wellhead) and flow rates of the injection operation; and

ii. the owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in §209.E.2.

4. Periodic Mechanical Integrity Testing. The owner or operator of a Class I hazardous waste injection well shall conduct mechanical integrity testing as follows:

a. the long string casing, injecting tubing, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover involving the unseating or disturbing of the injection tubing or annular seal system;

b. the bottom-hole cement shall be tested by means of an approved Radioactive Tracer Survey annually;

c. an approved temperature, noise, or other approved log shall be run at least once every five years to test for movement of fluid along the borehole. The commissioner may require such test whenever the well is worked over;

d. casing inspection logs shall be run once every five years unless the commissioner waives this requirement due to well construction or other factors which limit the test's reliability; and

e. any other test approved by the commissioner.

5. Mechanical Integrity Testing by Conservation Representative

a. One of the following tests shall be witnessed or reviewed onsite by a Louisiana Office of Conservation representative to verify mechanical integrity:

i. a fluid pressure test of the annular space; or

ii. review of the continuous monitoring records required in §209.J.

b. Verification of mechanical integrity under this Paragraph may be performed on an alternating basis. The frequency of integrity verification shall be quarterly for commercial Class I hazardous waste injection wells and semi-annually for onsite Class I hazardous waste injection wells. The commissioner or his representative reserves the right to specifically require more frequent testing as well as the right to specify the method of testing in specific instances.

6. Mechanical Integrity During Periods of Non-Use. Except during workovers or routine maintenance, any well which is not operational shall conform to the mechanical integrity requirements of §209.I.4 and 5 and shall sustain a positive pressure on the annulus during the period of non-

use. When an operator takes a well out of operation, the operator shall assure the mechanical integrity of the well during non-use (see §209.K). If a well cannot meet mechanical integrity requirements the operator shall submit a plan to the commissioner within 30 days of the integrity test, to properly bring the facility into compliance. If a plan is not submitted within 30 days or if the plan is considered inadequate, the owner or operator will be given six months to plug and abandon the well as required in §209.L.

7. Ambient Monitoring. This Paragraph sets forth ambient monitoring criteria for all Class I injection wells. Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the commissioner shall:

a. require the owner or operator to develop a monitoring program. At a minimum, the commissioner shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve;

b. when prescribing a monitoring system the commissioner may also require:

i. continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When such a well(s) is/are installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the commissioner;

ii. the use of indirect geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the commissioner, or to provide other site specific data;

iii. periodic monitoring of the groundwater, quality in the first aquifer overlying the injection zone;

iv. periodic monitoring of the groundwater quality in the lowermost USDW; or

v. any additional monitoring necessary to determine whether fluids are moving into or between USDW's or outside the injection zone.

8. The commissioner may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.

J. Reporting Requirements. Reporting requirements shall, at a minimum, include:

1. quarterly reports to the commissioner containing the following information. Quarterly reports are due no later than 30 days following the end of the quarter for which it is being submitted:

a. the physical, chemical, and other relevant characteristics of the injection stream;

b. monthly average, maximum and minimum values for injection pressure, flow rate and volume, cumulative volume of fluids, and annular pressure;

c. any changes in the annular fluid volume;

d. a description of any event which triggers an alarm or shutdown device required pursuant to §209.H.10 and 11 and the response taken;

e. a description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit; and

f. the results of monitoring prescribed under §209.I;

g. periodic test of mechanical integrity;

h. any other test of the injection well conducted by the permittee if required by the commissioner; and

i. any well workover performed during the quarter including minor well maintenance.

2. Workover Reporting

a. The owner or operator shall notify the commissioner and obtain a work permit prior to commencing any workover operation on the well. Workovers include, but are not limited to, plug and abandon, deepen, perforate, squeeze, plugback, sidetrack, pull tubulars, unseat packer, backwash, change interval of completion (disposal) within the approved injection zone, etc.

b. All work permits must be requested in writing by use of the appropriate form. If an unforseen situation arises which requires immediate attention, the permittee may request a verbal work permit by phoning the Office of Conservation. The permittee must then submit to the commissioner a completed work permit application within five days of obtaining the verbal permit.

c. Within 20 days following the completion of the authorized work, the permittee must submit to the Office of Conservation, one original and two copies of the well history and work resume report.

d. With the first quarterly report after the conclusion of the workover submit, to the aforementioned office, a completion report which not only includes the reason for the workover but also a detailed description and analysis of the work performed.

K. Temporarily Cease Injection

1. The owner or operator of a Class I hazardous waste injection well who temporarily ceases injection, except for periods of workovers or routine maintenance, may keep the well open provided the well is kept in compliance with the technical requirements applicable to active injection wells such as maintaining mechanical integrity, positive annular pressure, monitoring, etc. This is to ensure that the waste will not migrate out of the injection zone or endanger USDW's during the period of temporary disuse.

2. If a well has been out-of-service for a period of one year or longer, the owner or operator must inform the commissioner of intentions for the continued use of the well.

3. The owner or operator of a well that has ceased injection operations for more than two years shall notify the commissioner 30 days prior to resuming operation of the well.

L. Closure (Plug and Abandon)

1. Closure Plan. The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for closure of the well that meets the requirements of §209.L.4 and is acceptable to the commissioner. The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

a. The owner or operator shall submit the plan as part of the permit application, and upon approval by the commissioner, shall be a condition of any permit issued.

b. Any proposed significant revision to the method of closure reflected in the plan shall be submitted for approval by the commissioner no later than the date on which notice of closure is required to be submitted under §209.L.2.

c. The plan shall assure financial responsibility as required in §209.O and also include the following information:

i. the type, number, and placement of each plug including the elevation of the top and bottom of each plug;

ii. the type, grade, and quantity of material to be used in plugging;

iii. the method of placement of the plugs as required in §209.L.4.e;

iv. any proposed test or measurement to be made;

v. the amount, size, and location (by depth) of casing and any other materials to be left in the well;

vi. the method and location where casing is to be parted, if applicable; and

vii. the estimated cost of closure expressed in future dollars for a time period equal to the duration of a Class I injection well permit.

d. The commissioner may modify a closure plan where necessary.

2. Notice of Intent to Close. The owner or operator shall notify the commissioner by submission of an appropriate work permit at least 60 days before closure of a well. At the discretion of the commissioner, a shorter notice period may be allowed.

3. Closure Report. Within 60 days after closure or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a closure report to the commissioner. If the quarterly report is due less than 15 days after completion of closure, then the closure report shall be submitted within 60 days of closure. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). Such report shall consist of:

a. a statement that the well was closed in accordance with the closure plan previously submitted and approved by the commissioner; or

b. where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.

4. Standards for Well Closure

a. Prior to closing the well, the owner or operator shall observe and record the pressure decay for an appropriate time period or a time specified by the commissioner. The commissioner shall review the pressure decay and transient pressure observations conducted pursuant to §209.I.7.a and determine whether the injection activity has conformed with predicted values.

b. Prior to closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

i. pressure testing with liquid or gas;

ii. radioactive tracer surveys;

iii. noise, temperature, pipe evaluation, or cement bond logs; or

iv. any other test required by the commissioner.

c. Prior to well closure, the well shall be flushed with a buffer fluid.

d. Upon closure, the well shall be plugged with cement in a manner that will not allow the movement of fluids into or between USDW's or outside the injection zone.

e. Placement of cement plugs shall be accomplished by one of the following:

i. the Balance Method;

ii. the Dump Bailer Method;

iii. the Two-Plug Method; or

iv. an alternate method approved by the commissioner that will reliably provide a comparable level of protection.

f. Each plug shall be appropriately tagged and tested for seal and stability before closure is completed.

g. The well to be closed is to be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the commissioner, prior to the placement of the cement plug(s).

h. Upon successful completion of the closure, the surface location of the abandoned well shall be identified with a permanent marker inscribed with the operator's name, well class, well name and number, serial number, section-township-range, parish, and date plugged and abandoned.

M. Post-Closure Care

1. The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for post-closure care that meets the requirements of §209.M.2 and is acceptable to the commissioner. The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

a. The owner or operator shall submit the plan as part of the permit application and, upon approval by the commissioner, such plan will be a condition of any permit issued.

b. The owner or operator shall submit any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report required under §209.L.3.

c. The plan shall assure financial responsibility as required in §209.O.

d. The plan shall include the following information:

i. the pressure in the injection zone before injection began. Where a direct measurement of initial pressure is not available, then reasonable estimates may be used, provided they are acceptable to the commissioner;

ii. the anticipated pressure in the injection zone at the time of closure;

iii. the predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost USDW;

iv. predicted position of the waste front at closure;

v. the status of any cleanups required under §209.C; and

vi. the estimated cost of proposed post-closure care at a time equal to the duration of a Class I injection well permit expressed in terms of future dollars.

e. At the request of the owner or operator, or on his own initiative, the commissioner may modify the post-closure plan after submission of the closure report.

2. To provide for post-closure care, the owner or operator shall:

a. continue and complete any cleanup action required under §209.C, if applicable;

b. continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersect the base of the lowermost USDW. The commissioner may extend the period of post-closure monitoring if he determines that the well may endanger a USDW;

c. submit a survey plat to the local zoning authority designated by the commissioner. The plat shall indicate the location of the well relative to permanently surveyed benchmarks. A copy of the plat shall be submitted to the appropriate Regional Administrator, Environmental Protection Agency;

d. provide appropriate notification and information to such state and local authorities as have cognizance over drilling activities to enable such state and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone.

3. Each owner of a Class I hazardous waste injection well and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

a. the fact that the land has been used to manage hazardous waste;

b. the name of the state agency or local authority with which the plat was filed, as well as the address of the Regional Environmental Protection Agency Office to which it was submitted;

c. the type and volume of waste injected, the injection interval(s) into which it was injected, and the period over which injection occurred.

N. Recordkeeping Requirements

1. The owner or operator shall keep complete and accurate records of all phases of the injection operation from application through post-closure. This includes, but is in no way limited to:

a. area of review and corrective action requirements;

b. construction and completion information including logging and testing;

c. complete data on all monitoring requirements specified in the permit and/or by the commissioner for the injection well(s) and any associated monitoring well(s);

d. all periodic measurements and well test such as injection fluid analyses, bottom-hole pressure data, mechanical integrity records, etc.;

e. records reflecting the nature, composition, and volume of all injected fluids; and

f. closure (plug and abandon) and post-closure information.

2. The owner or operator shall retain all records of the well's operation described in Paragraph 1 above for a period of three years following well closure. The commissioner may require the owner or operator to deliver the records to the Louisiana Office of Conservation at the conclusion of the retention period. If so, then the records shall thereafter be retained at a location designated by the commissioner for that purpose.

3. All records shall be made available for review upon request from a representative of the commissioner.

O. Financial Responsibility

1. The permit shall require the owner or operator to demonstrate and maintain financial responsibility for closure (plug and abandon) and post-closure care by using a trust fund, surety bond, letter of credit, financial statement, insurance, or corporate guarantee, or other materials acceptable to the commissioner. The amount of the funds available shall be no less than the amount identified in §209.L.1.c.vii and §209.M.1.d.vi.

2. The obligation to maintain financial responsibility for post-closure care survives the termination of a permit or the cessation of injection activities. The requirement to maintain financial responsibility is enforceable regardless of whether the requirement is a condition of the permit.

P. Waiver of Requirements

1. Where applicable on a case-by-case basis, the commissioner may alter requirements for a Class I hazardous waste injection well from those set forth in this Section provided any reduction in requirements will not result in an increased risk for movement of fluids into an underground source of drinking water or outside of the injection zone.

2. When reducing requirements under this Subsection, the commissioner shall issue an order either separately or as part of the permit explaining the reasons for the action.

Q. Additional Requirements. The commissioner may prescribe additional requirements for a Class I hazardous waste injection well than those described in these regulations in order to protect underground sources of drinking water or prevent the movement of fluids outside of the injection zone.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 15:978 (November 1989).

§211. Permitting Process

A. Applicability. This Section contains procedures for issuing UIC permits for Class I hazardous waste injection wells other than emergency (temporary) permits.

B. Application Submission and Review

1. Any person required to have a UIC permit shall submit an application to the Office of Conservation as outlined in §205.

2. Check for completeness:

a. the commissioner shall not issue a permit before receiving an application form and any required supplemental information which are completed to his satisfaction;

b. each application for a permit submitted for a Class I hazardous waste injection well will be reviewed for completeness by the commissioner and the applicant will be notified of the commissioner's decision within 90 days of its receipt; and

c. for each application for a Class I hazardous waste injection well permit, the commissioner shall, no later than the date the application is ruled complete, prepare and mail to the applicant a project decision schedule. The schedule shall specify target dates by which the commissioner intends to:

i. prepare a draft permit;

ii. give public notice;

iii. complete the public comment period, including any public hearing; and

iv. issue a final permit.

3. Incomplete Applications

a. If the application is incomplete, the commissioner shall list in the notification in §211.B.2.b, the information necessary to make the application complete. The commissioner shall notify the applicant when an application is complete. The commissioner may request additional information from an applicant only when necessary to clarify, modify, or supplement previously submitted material. Requests for such additional information will not render an application incomplete.

b. If an applicant fails or refuses to correct deficiencies found in the application, the permit may be denied and, for existing wells, appropriate enforcement actions may be taken under the applicable statutory provision.

4. If the commissioner decides that a site visit is necessary for any reason in conjunction with the processing of an application, he shall notify the applicant, state the reason for the visit, and a date shall be scheduled.

C. Draft Permits

1. Once an application is complete, the commissioner shall prepare a draft permit or deny the application.

2. The applicant may appeal the decision to deny an application in a letter to the commissioner who may then call a public hearing through the provisions of §211.G.l.

3. If the commissioner prepares a draft permit, it shall contain the following information where appropriate:

a. all conditions under §§207 and 209;

b. all compliance schedules under §207.N; and

c. all monitoring requirements under applicable paragraphs in §209.

4. All draft permits prepared under this Section may be accompanied by a fact sheet (§211.D), and shall be publicly noticed (§211.E), and made available for public comment (§211.F).

D. Fact Sheet

1. A fact sheet shall be prepared for every draft permit for all major facilities or activities and for every draft permit which the commissioner finds is the subject of wide-spread public interest or raises major issues. The fact sheet shall

briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permits. The commissioner shall send this fact sheet to the applicant and, on request, to any other person.

2. The fact sheet shall include, when applicable:

a. a brief description of the type of facility or activity which is the subject of the draft permit;

b. the type and quantity of wastes, fluids, or pollutants which are proposed to be or are being injected;

c. a brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions;

d. reasons why any requested variances or alternatives to required standards do or do not appear justified;

e. a description of the procedures for reaching a final decision on the draft permit including:

i. the beginning and ending dates of the comment period under §211.F and the address where comments will be received;

ii. procedures for requesting a hearing and the nature of that hearing; and

iii. any other procedures by which the public may participate in the final decision;

f. name and telephone number of a person to contact for information.

3. A copy of the fact sheet shall be mailed to all persons identified in §211.E.a.i, ii and iii.

E. Public Notice of Permit Actions and Public Comment Period

1. Scope

a. The commissioner shall give public notice that the following actions have occurred:

i. a draft permit has been prepared under §211.C; and

ii. a hearing has been scheduled under §211.G.

b. No public notice is required when a request for permit modification, revocation and reissuance, or termination is denied under §213. Written notice of that denial shall be given to the requester and to the permittee.

c. Public notices may describe more than one permit or permit action.

2. Timing

a. Public notice of the preparation of a draft permit required under §211.E shall allow 30 days for public comment.

b. Public notice of a public hearing shall be given 30 days before the hearing. Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.

3. Methods. Public notice of activities described in §211.E.l.a shall be given by the following methods:

a. by mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this Paragraph may waive his rights to receive notice):

i. the applicant;

ii. any other agency which the commissioner knows has issued or is required to issue a permit for the same facility or activity (including EPA);

iii. federal and state agencies with jurisdiction over fish, shellfish, and wildlife resources and over coastal zone management plans, the Advisory Council on Historic Preservation, the State Archeological Survey and Antiquities Commission, the Department of Environmental Quality, the Department of Justice, and other appropriate government authorities, including any affected states; and

iv. persons on a UIC mailing list;

b. for noncommercial Class I hazardous waste injection well permits, publication of a notice in a daily or weekly newspaper within the area affected by the facility or activity;

c. in a manner constituting legal notice to the public under state law; and

d. any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.

4. Contents

a. All Public Notices. Public notices issued under this Section shall contain the following information:

i. name and address of the Division of the Office of Conservation processing the permit action for which notice is being given;

ii. name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;

iii. a brief description of the business conducted at the facility or activity described in the permit application;

iv. name, address, and telephone number of a person from whom interested persons may obtain copies of the draft permit, and the fact sheet, and further information concerning the application;

v. a brief description of the comment procedures required by §211.F and the time and place of any hearing that will be held, including a brief statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision; and

vi. location of the proposed injection well or activity, the depth of the proposed injection zone, the depth of the base of the lowermost underground source of drinking water, and the list of waste and volumes proposed to be injected;

vii. any additional information considered necessary or proper.

b. Public Notices for Hearings. In addition to the general public notice described in §211.E.4.a, the public notice of a hearing under §211.G shall contain the following information:

i. reference to the date of previous public notices relating to the permit;

ii. date, time, and place of the hearing; and

iii. a brief description of the nature and purpose of the hearing including the applicable rules and procedures.

c. Public hearings are required for all applications for new commercial Class I hazardous waste injection wells. The method and content of public notices for such hearings are as follows.

i. Applicants for new commercial Class I hazardous waste injection wells shall give public notice of a scheduled and required public hearing on three separate days within a period of 30 days prior to the scheduled hearing, with at least five days between each publication of notice, both in the official state journal and in the official journal of the parish in which the well is located.

ii. Applicants for commercial Class I hazardous waste injection wells shall also be required to place an advertisement in the official state journal and in the official journal of the parish in which the well is to be located, but not in the classified or public notice section of the newspapers, in a form which shall not be less than one-half page in size and printed in bold face type. Such notice shall inform the public that application for a permit has been made to the Office of Conservation for a new commercial Class I hazardous waste injection well. The notice shall also contain the information required in §211.E.4.a and b.

F. Public Comments and Requests for Public Hearings. During the public comment period provided under §211.E any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments shall be considered in making the final decision and shall be answered as provided in §211.H.

G. Public Hearings

1. The commissioner shall hold a public hearing whenever he finds, on the basis of requests, a significant degree of public interest in (a) draft permit(s). The commissioner also may hold a public hearing at his discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision. Public notice of the hearing shall be given as specified in §211.E.

2. Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. The public comment period under §211.E shall automatically be extended to the close of any public hearing under this Subsection. The hearing officer may also extend the comment period by so stating at the hearing.

3. A tape recording or written transcript of the hearing shall be made available to the public.

H. Response to Comments

1. At the time that any final permit is issued the commissioner shall issue a response to comments. This response shall:

a. specify which provisions if any, of the draft permit have been changed in the permit decision and the reasons for the change; and

b. briefly describe and respond to all significant comments on the draft permit or the permit application raised during the public comment period, or during any hearing.

2. The response to comments shall be available to the public.

I. Permit Issuance and Effective Date

1. After closure of the public comment period, including any public hearing, under §211.E on a draft permit, the commissioner shall issue a final permit decision within 90 days.

2. A final permit decision shall become effective on the date of issuance.

3. Approval or the granting of a permit to drill and construct a Class I hazardous waste injection well shall be valid for a period of one year and if construction has not been completed in that time, then the permit shall be null and void. The permittee may request an extension of this one year requirement; however, the commissioner shall approve the request for extenuating circumstances only.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 15:978 (November 1989).

§213. Permit Modification, Revocation and Reissuance, Termination, Transfer or Renewal

A. Applicability. The rules of this Section set forth the standards and requirements for applications and actions concerning modification, revocation and reissuance, termination, transfer and renewal of permits.

B. Permit Actions

1. The permit may be modified, revoked and reissued, or terminated for cause.

2. The permittee shall furnish to the commissioner, within 30 days, any information which the commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or terminating a permit,

or to determine compliance with the permit. The permittee shall also furnish to the commissioner, upon request, copies of records required to be kept by the permit.

3. The commissioner may, upon his own initiative or at the request of any interested person, review any permit to determine if cause exists to modify, revoke and reissue, or terminate the permit for the reasons specified in §213.C, D and E. All requests shall be in writing and shall contain facts or reasons supporting the request.

4. If the commissioner decides the request is not justified, he shall send the person making the request a brief written response giving a reason for the decision. Denials of requests for modification, revocation and reissuance, or termination are not subject to public notice, comment, or hearings.

5. If the commissioner decides to modify or revoke and reissue a permit under §213.C, D or E, he shall prepare a draft permit under §211.C incorporating the proposed changes. The commissioner may request additional information and, in the case of a modified permit, may require the submission of an updated permit application. In the case of revoked and reissued permits, the commissioner shall require, if necessary, the submission of a new application.

C. Modification or Revocation and Reissuance of Permits

1. The following are causes for modification and may be causes for revocation and reissuance of permits.

a. Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

b. Information. The commissioner has received information pertinent to the permit. Permits for Class I hazardous waste injection wells may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. Cause shall include any information indicating that cumulative effects on the environment are unacceptable.

c. New Regulations

i. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued and conformance with the changed standards or regulations is necessary for the protection of the health or safety of the public or the environment. Permits for Class I hazardous waste injection wells may be modified during their terms when:

(a) the permit condition requested to be modified was based on a promulgated regulation or guideline;

(b) there has been a revision, withdrawal, or modification of that portion of the regulation or guideline on which the permit condition was based; and

(c) a permittee requests modification within 90 days after *Louisiana Register* notice of the action on which the request is based.

ii. When standards or regulations on which the permit was based have been changed by withdrawal of standards or regulations or by promulgation of amended standards or regulations which impose less stringent requirements on the permitted activity or facility and the permittee requests to have permit conditions based on the withdrawn or revised standards or regulations deleted from his permit, the permit may be modified as a minor modification without providing for public comment.

iii. For judicial decisions, a court of competent jurisdiction has remanded and stayed Office of Conservation regulations or guidelines and all appeals have been exhausted, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee to have permit conditions based on the remanded or stayed standards or regulations deleted from his permit.

d. Compliance Schedules. The commissioner determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonable available remedy.

2. Causes for Modification or Revocation and Reissuance. The following are causes to modify or, alternatively, revoke and reissue a permit.

a. Cause exists for termination under §213.E, and the commissioner determines that modification or revocation and reissuance is appropriate.

b. The commissioner has received notification of a proposed transfer of the permit and the transfer is determined not to be a minor modification (see §213.D.4). A permit may be modified to reflect a transfer after the effective date (§213.F.2.b) but will not be revoked and reissued after the effective date except upon the request of the new permittee.

c. A determination that the waste being injected is a hazardous waste as defined in the Louisiana Hazardous Waste Management Program either because the definition has been revised or because a previous determination has been changed.

3. Facility Siting. Suitability of an existing facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that continued operations at the site pose a threat to the health or safety of persons or the environment which was unknown at the time of permit issuance. A change of injection site or facility location may require modification or revocation and issuance as determined to be appropriate by the commissioner.

4. If a permit modification satisfies the criteria of this Section, a draft permit must be prepared and other applicable procedures must be followed.

D. Minor Modifications of Permits. Upon the consent of the permittee, the commissioner may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this Section without issuing a draft permit and providing for public comment. Minor modifications may only:

1. correct typographical errors;

2. require more frequent monitoring or reporting by the permittee;

3. change an interim compliance date in a schedule of compliance, provided the new date does not interfere with attainment of the final compliance date requirement;

4. allow for a change in ownership or operational control of a facility where the commissioner determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the commissioner (see §213.F);

5. change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the commissioner, would not interfere with the operation of the facility or its ability to meet conditions prescribed in the permit, and would not change its classification;

6. change construction requirements or plans approved by the commissioner provided that any such alteration shall comply with the requirements of this Section and §209. No such changes may be physically incorporated into construction of the well prior to approval; or

7. amend a plugging and abandonment plan which has been updated under §209.L.

E. Termination of Permits

1. The commissioner may terminate a permit during its term for the following causes:

a. noncompliance by the permittee with any condition of the permit;

b. the permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or

c. a determination that the permitted activity endangers the health or safety of persons or the environment which activity cannot be regulated to acceptable levels by permit modification and can only be regulated to acceptable levels by permit termination.

2. If the commissioner decides to terminate a permit, he shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit which follows the same procedures as any draft permit prepared under §211.C.

3. The commissioner may alternatively decide to modify or revoke and reissue a permit for the causes in §213.E (see §213.C.2.a).

F. Transfers of Permits

1. A permit may be transferred to a new owner or operator upon approval by the commissioner.

2. The current permittee shall submit an application for transfer at least 30 days before the proposed transfer date. The application shall contain the following:

a. name and address of the transferee;

b. date of proposed transfer; and

c. a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them. The agreement should also demonstrate to the satisfaction of the commissioner that the financial responsibility requirements of §207.C will be met by the new permittee.

3. If the commissioner does not notify the existing permittee and the proposed new permittee of his intent to modify or revoke and reissue the permit under §213.C.2.b the transfer is effective on the date specified in the agreement mentioned in Paragraph 2.c above.

4. If no agreement described in §213.F.2 is provided, responsibility for compliance with the terms and conditions of the permit and liability for any violation will shift from the existing permittee to the new permittee on the date the transfer is approved.

5. If a person attempting to acquire a permit causes or allows operation of the facility before approval by the commissioner, it shall be considered a violation of these rules for operating without a permit or other authorization.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 15:978 (November 1989).

§215. Emergency or Temporary Permits

A. Applicability. The provisions for this Section set the standards applicable to emergency or temporary permits for Class I hazardous waste injection wells.

B. Coverage. Notwithstanding any other provision of this Section, the commissioner may temporarily permit a specific underground injection which has not otherwise been authorized by rule or permit if an imminent and substantial endangerment to the health of persons will result unless a temporary emergency permit is granted. The permittee need not comply with the provisions of the permit to the extent and for the duration that noncompliance is authorized in a temporary emergency permit.

C. Requirements for Issuance

1. Any temporary permit under this Section shall be for no longer term than required to prevent the hazard.

2. Notice of any temporary permit under this Subsection shall be published in accordance with §211.E within 10 days of the issuance of the permit.

3. The temporary permit under this Subsection may be either oral or written. If oral, it must be followed within five calendar days by a written temporary emergency permit.

4. The commissioner shall condition the temporary permit in any manner he determines is necessary to ensure that the injection will not result in the movement of fluids into an underground source of drinking water or outside of the injection zone.

D. Duration. A temporary permit shall not exceed a maximum of 90 days.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:1D and 4C(16), and 4.1.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 15:978 (November 1989).

Title 43
NATURAL RESOURCES
Part XVII. Office of Conservation—Injection and Mining
Subpart 3. Statewide Order No. 29-M

Chapter 3. Hydrocarbon Storage Wells in Salt Dome Cavities

Editor's Note: Further policies can be found in "Commissioner's Order Second Supplement to Statewide Order 29-M," dated June 8, 1979.

§301. Findings of Fact—The Commissioner of Conservation Finds as Follows

A. That rules and regulations should be established governing the use and/or development of salt dome caverns for storage of liquid and/or gaseous hydrocarbons under those certain conditions as set forth herein below where it is shown that such use and/or storage will carry out the purpose and intent of the laws of this state.

B. That except as to liquid and/or gaseous hydrocarbon storage projects begun before October 1, 1976, no such project to develop and/or use a salt dome in the state of Louisiana for the injection, storage and withdrawal of liquid and/or gaseous hydrocarbons shall be permitted until the commissioner has issued an order following a public hearing after 10 days notice, under the rules covering such matters, which order shall include the following findings of fact:

1. that the salt dome sought to be used for the injection, storage and withdrawal of liquid and/or gaseous hydrocarbons is suitable and feasible for such use as to area, salt volume, depth, and other physical characteristics;

2. that the use of salt dome cavity for the storage of liquid and/or gaseous hydrocarbons will not contaminate other formations containing fresh water, oil, gas or other commercial mineral deposits, except salt; and

3. that the proposed storage, including all surface pits and surface storage facilities incidental thereto which are used in connection with the salt dome cavity storage operation, will not endanger lives or property and is environmentally compatible with existing uses of the salt dome area, and which order shall provide that:

a. liquid and/or gaseous hydrocarbons, which are injected and stored in a salt dome cavity, shall at all times be deemed the property of the injector, his successors or assigns, subject to the provisions of any contract with the affected land or mineral owners; and

b. in no event shall the owner of the surface of the lands or water bottoms or of any mineral interest under or adjacent to which the salt dome cavity may lie, or any other person, be entitled to any right of claim in or to such liquid and/or gaseous hydrocarbons stored unless permitted by the injector.

C. That in presenting evidence to the commissioner to enable him to make the findings described in Subsection B above, the applicant shall demonstrate that the proposed storage of liquid and/or gaseous hydrocarbons will be conducted in a manner consistent with established practices to preserve the integrity of the salt deposit and the overlying sediments. This shall include an assessment of the stability of the proposed cavity design, particularly with regard to the size, shape and depth of cavity, the amount of separation among cavities, and the amount of separation between the outer-most cavity wall and the periphery of the salt deposit.

D. That all projects for the storage of liquid and/or gaseous hydrocarbons approved by the commissioner pursuant to Subsection B above, should be designed, located, equipped, and operated in accordance with the following standards.

1. Design of underground storage chamber:

a. prior to the design and construction of an underground storage chamber, a qualified engineer and geologist shall perform an investigation to determine the feasibility of such a storage system at a particular site; and

b. the data obtained during the feasibility investigation shall be considered in the design of a solution mined underground storage system. Design shall be performed by or under the supervision of an engineer or geologist qualified for this type of work, and shall include such factors, among others, as: type of storage use, location of the cavity(ies), number of cavities, cavity capacity, and maximum development diameter of the cavity(ies). The design shall assure that project development can be conducted in a reasonable, prudent and systematic manner; and shall stress physical and environmental safety and the prevention of waste. The design and solutioning shall be continually reviewed throughout the construction phase to take into consideration pertinent additional detailed subsurface information; and shall include provisions for protection from damage caused by hydraulic shock. The original development and operational plans shall be modified to conform with good engineering practices, if necessary.

2. Location of underground storage chamber:

a. the wellhead and borehole shall be located so that the storage chamber at maximum development diameter shall not extend closer than l00 feet to the property of others who have not consented to subsurface storage under their land;

b. the minimum separation of adjacent walls of storage chambers as measured in any direction shall be established by a qualified engineer, considering:

i. the salt properties;

ii. the elevation of the top and bottom of the adjacent cavities;

iii. their maximum development diameter relative to the spacing of the cavities; and

iv. other considerations deemed appropriate for the specific site; but, in no case shall such separation at any time during the storage project be less than 200 feet. The walls of storage chambers shall be no less than 100 feet from the boundary of the lands included in the storage project on which the chambers are located; and

c. if the design should involve the intentional subsurface connection between two adjacent storage chambers under one property (e.g., a U tube storage chamber system) the minimum separation between cavities specified in Subparagraph b above, shall not apply.

3. Casing Program

a. The bore of a storage chamber access hole shall be cased and completed in accordance with rules, regulations, and good engineering practices pertaining to oil and/or gas wells of comparable depth applicable in the same area in which the chamber is located as established by the commissioner, except as specifically provided below.

b. The borehole shall be dually cased from the surface into the salt, one casing string being an intermediate string, the other being the final cemented string. Exceptions to this procedure will be processed under Subsection G.

c. The intermediate cemented casing string shall have adequate tensile and collapse strengths as established by the commissioner for the setting depth. This string shall be cemented from casing seat (bottom of casing) to ground surface when practicable; however, in every case it shall be cemented a sufficient distance to prevent migration of the stored products into zones of porosity or permeability in the overburden.

d. The final cemented string shall have adequate tensile and collapse strengths as established by the commissioner for the setting depth. This string shall be cemented from casing seat (bottom of string) to ground surface and shall be set a minimum of 300 feet into the salt.

e. The final (production) cemented casing string shall be hydrostatically pressure tested before drilling out the plug (shoe). The test pressure applied at the surface shall be a minimum of 200 psi. However, the test pressure when measured at the surface shall not cause pressure at the casing seat to exceed 0.9 psi. per foot of depth. The test pressure shall be maintained for a minimum of one hour to verify casing integrity and absence of thread leaks.

f. The casing seat and cement of final cemented casing string shall be hydrostatically tested after drilling out. At least 10 feet of salt below the casing shall be penetrated prior to this test. The test pressure calculated at the casing seat shall equal the maximum operating pressure at that point.

g. After the wellhead has been installed and prior to storing products, the system shall be hydrostatically pressure tested as a unit.

h. All tests required by this Section shall be prepared and supervised by a qualified engineer.

4. Operating Pressure on Solution Mined Storage Chamber

a. The maximum and minimum operating pressure of a storage chamber shall be determined by a qualified engineer after considering the geological characteristics of the dome. The maximum operating pressure (gauge) at the casing seat or chamber ceiling, whichever is the shallowest, shall not exceed 0.9 psi per foot of overburden.

b. The storage chamber shall not be subjected to pressures in excess of the maximum operating pressure even for short periods of time (including pressure pulsation peaks, abnormal operating condition, etc.).

5. Wellhead and Flowlines

a. All wellhead components (casinghead, tubinghead, etc.), valves and fittings shall be of steel. The water side of the wellhead shall have the same pressure rating as the products side. Each flowline connected to the wellhead shall be equipped with a remotely operated shut-off valve as well as a manually operated positive shut-off valve located on the wellhead. The wellhead, flowlines, valves, and all related connections shall have a test pressure rating at least equivalent to 125 percent of the maximum pressure which could be exerted at the surface. All valves shall be periodically inspected and maintained in good working order.

b. The wellhead and storage chamber shall be protected with safety devices to prevent pressures in excess of maximum operating pressure from being exerted on the storage chamber, and to prevent backflow of stored products in event of flowline rupture.

c. The brine flow line(s) shall be equipped with a safety device(s) to prevent the escape of product.

d. A continuous flare or other safety system shall be installed at or near each brine pit or at any other location where the uncontrollable escape of liquefied gases are likely to occur and the flare shall be burned continuously when a liquefied gas is being injected into a cavern.

e. Caverns containing hydrocarbons that exist as liquids at ambient conditions shall be surrounded by levees, booms, or other containment devices suitable for retention of liquids released by accidental spillage.

f. Competent personnel shall be at either the well or other control sites during injection or withdrawal from any storage well. An automated system approved by the commissioner may be employed in lieu of the above.

g. The wellhead shall be protected from mechanical damage by trespassers and/or accidental physical damage.

6. Saltwater Disposal and Brine Storage. Saltwater disposal wells shall be drilled and completed in accordance with existing statewide rules and regulations of the commissioner. Brine disposal reservoirs shall be designed to prevent the contamination of air, fresh water or soil, or as directed by appropriate state agencies.

E. That all hydrocarbon storage projects conducted in the state of Louisiana should comply with the following requirements pertaining to inspection, record keeping, safety and abandonment.

1. Safety Inspections

a.i. Each operator of a solution cavern storage well shall conduct semi-annual safety inspections of such facility, and file with the commissioner a written report consisting of the inspection procedures and results within 30 days following the inspection. Such inspections shall be conducted during the months of January and July of each year. The operator shall notify the commissioner at least five days prior to such inspections so that his representative may be present to witness the inspections. Inspections shall include, but not be limited to, the following:

(a). operations of all manual valves;

(b). operation of all automatic shut-in safety valves, including sounding or alarm devices;

(c). flare system installation, or hydrocarbon filters;

(d). earthen brine pits, tanks, firewalls and related equipment;

(e). flowlines, manifolds, and related equipment; and

(f). warning signs, safety fences, etc.

ii. Additional inspections may be made by representatives of the department at any time during regular working hours and upon reasonable notice to the cavern owner.

b. A capacity determination for each storage chamber shall be made and filed with the commissioner prior to operation of those projects begun after October 1, 1976. The latest available determination for each storage chamber existing on or begun prior to October 1, 1976 shall be filed within 90 days of the effective date of Statewide Order No. 29-M. These determinations shall be verified every five years, or as soon as possible thereafter; but in no event shall this period exceed 10 years.

c. A complete inspection of the Christmas tree and casing shall be conducted every five years or as soon as possible thereafter.

2. Design and Construction Records. Records pertaining to project design and construction shall be retained for the life of the storage chamber. (Such data shall include well drilling logs, electrical logs, directional surveys, completion and cementing data, pressure test records, geophysical records, washing records, surveys, photographs, inspection, reports, permits, certified location plat, etc.)

3. Safety Warnings. Appropriate safety precaution signs shall be displayed and unauthorized personnel kept out of the storage area. Each storage wellhead shall be visibly marked with an appropriate identifying sign.

4. Abandonment Procedure. Prior to the commencement of plugging operations on any project well or the abandonment of any storage cavity, an application describing the method to be used shall be filed with and approved by the commissioner. Unless the commissioner specifies to the contrary, wells shall be plugged in accordance with Statewide Order No. 29-B, §137.

F. That should the commissioner determine that the continued operation of a storage chamber and/or the product storage well or associated wellhead facilities (wellhead, valves, brine tanks or pits and flares) would cause unsafe operating conditions, waste pollution, or contamination of air, fresh water or soil, or encroachment on adjacent property, he may immediately prohibit further operation of the well or associated wellhead facilities until such time as he has determined that the project can and will be conducted in a physically and environmentally safe manner.

G. That exceptions to the guidelines and requirements set forth in Subsections D and E above, should be granted by the commissioner only upon proper showing by the applicant at a public hearing that such exception is reasonable, justified by the particular circumstances, and consistent with the intent of this order regarding physical and environmental safety and the prevention of waste.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:23(C).

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 3:310 (July 1977).

§303. Compliance

A. Now, therefore, it is ordered that from and after July 20, 1977, any applicant for approval of the use and/or development of cavities in a salt dome for storage of liquid and/or gaseous hydrocarbons in the state of Louisiana shall comply with the provisions §301.B, C, D and E;

B. from and after July 20, 1977, all operators of solution cavern storage wells shall comply with the provisions of §301.E hereof;

C. if it is determined by the commissioner that any unsafe operating condition, waste, pollution, or contamination of air, fresh water, or soil is imminent (reference §301.F above), further operation of any affected storage chamber and/or product storage well and associated facilities shall be discontinued until such time as it is determined that the project will be conducted in a physically and environmentally safe manner; and

D. exceptions to the guidelines set forth in §301.D and E shall be granted pursuant to §301.G above.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:23(C).

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 3:310 (July 1977).

Title 43
NATURAL RESOURCES
Part XVII. Office of Conservation—Injection and Mining
Subpart 4. Statewide Order No. 29-M-2

Chapter 31. Disposal of Exploration and Production Waste in Solution-Mined Salt Caverns

§3101. Definitions

Application the filing on the appropriate Office of Conservation form(s), including any additions, revisions, modifications, or required attachments to the form(s), for a permit to operate a salt cavern waste disposal facility or parts thereof.

Aquifer a geologic formation, groups of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

Blanket Material sometimes referred to as a "pad." The blanket material is a fluid placed within a salt cavern that is lighter than the water in the cavern and will not dissolve the salt or any mineral impurities that may be contained within the salt. The function of the blanket is to prevent unwanted leaching of the salt cavern roof, prevent leaching of salt from around the cemented casing, and to protect the cemented casing from internal corrosion. Blanket material typically consists of crude oil, diesel, mineral oil, or some fluid possessing similar noncorrosive, nonsoluble, low density properties. The blanket material is placed between the salt cavern's outermost hanging string and innermost cemented casing.

Brine water within a salt cavern that is completely or partially saturated with salt.

Cap Rock the porous and permeable strata immediately overlying all or part of the salt stock of some salt structures typically composed of anhydrite, gypsum, limestone, and occasionally sulfur.

Casing metallic pipe placed and cemented in the wellbore for the purpose of supporting the sides of the wellbore and to act as a barrier preventing subsurface migration of fluids out of or into the wellbore.

Catastrophic Collapse the sudden or utter failure of the overlying strata caused by the removal or otherwise weakening of underlying sediments.

Cementing the operation (either primary, secondary, or squeeze) whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing.

Circulate to the Surface the observing of actual cement returns to the surface during the primary cementing operation.

Commercial Salt Cavern Facility a legally permitted salt cavern waste disposal facility that disposes of exploration and production waste off the site where produced by others for a fee or other consideration.

Commissioner the Commissioner of Conservation for the State of Louisiana.

Contamination the introduction of substances or contaminants into a groundwater aquifer, a USDW or soil in such quantities as to render them unusable of their intended purposes.

Discharge the placing, releasing, spilling, percolating, draining, pumping, leaking, mixing, migrating, seeping, emitting, disposing, by-passing, or other escaping of pollutants on or into the air, ground, or waters of the state. A discharge shall not include that which is allowed through a federal or state permit.

E&P Waste exploration and production waste.

Effective Date the date of final promulgation of these rules and regulations.

Emergency Shutdown Valve a valve that automatically closes to isolate a salt cavern well from surface piping in the event of a specified condition that, if uncontrolled, may cause an emergency.

Exempted Aquifer an aquifer or its portion that meets the criteria of the definition of underground source of drinking water but which has been exempted according to the procedures set forth in §3103.E.2.

Existing Salt Cavern a salt cavern originally permitted by the Office of Conservation for use other than E&P waste disposal.

Existing Well a wellbore originally permitted by the Office of Conservation for use other than to facilitate E&P waste disposal into a salt cavern.

Exploration and Production Waste (E&P Waste) drilling wastes, salt water, and other wastes associated with the exploration, development, or production of crude oil or natural gas wells and which is not regulated by the provisions of, and, therefore, exempt from the Louisiana Hazardous Waste Regulations and the Federal Resource Conservation and Recovery Act, as amended. E&P Wastes include, but are not limited to, those wastes listed in the definition for E&P Waste located in LAC 43:XIX.501 (Definitions).

Fluid any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas or any other form or state.

Generator a person or corporate entity who creates or causes to be created any E&P waste.

Ground Subsidence the downward settling of the Earth s surface with little or no horizontal motion in response to natural or manmade subsurface actions.

Groundwater Aquifer water in the saturated zone beneath the land surface that contains less than 10,000 mg/l total dissolved solids.

Groundwater Contamination the degradation of naturally occurring groundwater quality either directly or indirectly as a result of human activities.

Hanging String casing whose weight is supported at the wellhead and hangs vertically in a larger cemented casing or another larger hanging string.

Injection and Mining Division the Injection and Mining Division of the Louisiana Office of Conservation within the Department of Natural Resources.

Leaching the process whereby an undersaturated fluid is introduced into a salt cavern thereby dissolving additional salt and increasing the volume of the salt cavern.

Migrating any movement of fluids by leaching, spilling, discharging, or any other uncontained or uncontrolled manner, except as allowed by law, regulation, or permit.

New Well a wellbore permitted by the Office of Conservation after the effective date of these rules and regulations to be completed into an existing salt cavern to facilitate E&P waste disposal.

Non-Commercial Salt Cavern Facility a legally permitted salt cavern waste disposal facility that disposes of only E&P waste generated by the owner of the facility during oil and gas exploration and production activities.

Office of Conservation the Louisiana Office of Conservation within the Department of Natural Resources.

Oil-Based Drilling Muds any oil-based drilling fluid composed of a water in oil emulsion, organophillic clays, drilled solids and additives for down-hole rheology and stability such as fluid loss control materials, thinners, weighting agents, etc.

Operator the person recognized by the Office of Conservation as being responsible for the physical operation of the facility or activity subject to regulatory authority under these rules and regulations.

Owner the person recognized by the Office of Conservation as owning the facility or activity subject to regulatory authority under these rules and regulations.

Person an individual, association, partnership, public or private corporation, firm, municipality, state or federal agency and any agent or employee thereof, or any other juridical person.

Produced Water liquids and suspended particulate matter that is obtained by processing fluids brought to the surface in conjunction with the recovery of oil and gas from underground geologic formations, with underground storage of hydrocarbons, or with solution mining for brine.

Public Water System a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves at least 25 individuals. Such term includes:

1. any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and

2. any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system.

Release the accidental or intentional spilling, pumping, leaking, pouring, emitting, leaching, escaping, or dumping of pollutants into or on any air, land, groundwater, or waters of the state. A release shall not include that which is allowed through a federal or state permit.

Salt Cavern see *solution-mined salt cavern*

Salt Cavern Roof the uppermost part of a salt cavern being just below the neck of the wellbore. The shape of the salt cavern roof may be flat or domed.

Salt Cavern Waste Disposal Facility any public, private, or commercial property, including surface and subsurface lands and appurtenances thereto, used for receiving, storing, and/or processing E&P waste for disposal into a solution-mined salt cavern.

Salt Cavern Well a well extending into the salt stock to facilitate the disposal of waste or other fluids into a salt cavern.

Salt Dome a diapiric, typically circular structure that penetrates, uplifts, and deforms overlying sediments as a result of the upward movement of a salt stock in the subsurface. Collectively, the salt dome includes the salt stock and any overlying uplifted sediments.

Salt Stock a typically cylindrical formation composed chiefly of an evaporite mineral that forms the core of a salt dome. The most common form of the evaporite mineral is halite known chemically as sodium chloride (NaCl). Cap rock shall not be considered a part of the salt stock.

Solution-Mined Salt Cavern a cavity created within the salt stock by dissolution with water.

State the state of Louisiana.

Subsidence see *ground subsidence*.

Surface Casing the first string of casing installed in a well, excluding conductor casing.

Transport Vehicle a motor vehicle, rail freight car, freight container, cargo tank, portable tank, or vessel used for the transportation of E&P wastes or other materials for use or disposal at a salt cavern waste disposal facility.

Transportation the movement of wastes or other materials from the point of generation or storage to the salt cavern waste disposal facility by means of commercial or private transport vehicle.

Unauthorized Discharge a continuous, intermittent, or one-time discharge, whether intentional or unintentional, anticipated or unanticipated, from any permitted or unpermitted source which is in contravention of any provision of the Louisiana Environmental Quality Act (R.S. 30:2001 et seq.) or of any permit or license terms and conditions, or of any applicable regulation, compliance schedule, variance, or exception of the Commissioner of Conservation.

Underground Source of Drinking Water an aquifer or its portion:

1. which supplies any public water system; or

2. which contains a sufficient quantity of groundwater to supply a public water system; and

a. currently supplies drinking water for human consumption; or

b. contains fewer than 10,000 mg/1 total dissolved solids; and which is not an exempted aquifer.

Waters of the State both surface and underground waters within the state of Louisiana including all rivers, streams, lakes, groundwaters, and all other water courses and waters within the confines of the state, and all bordering waters, and the Gulf of Mexico.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:914 (June 2003).

§3103. General Provisions

A. Applicability

1. These rules and regulations shall apply to all applicants, owners and/or operators of non-commercial salt cavern waste disposal facilities for disposal or proposed for disposal of E&P waste. However, where indicated, certain criteria found herein will also apply to commercial facility operators, in addition to the requirements of LAC 43:XIX.501 et seq.

2. These rules and regulations do not address creation of a salt cavern, rather, only the disposal of E&P waste into a salt cavern. Rules governing the permitting, drilling, constructing, operating, and maintaining of a Class III brine solution mining well and cavern are codified in applicable sections of Statewide Order No. 29-N-1 (LAC 43:XVII, Subpart 1) or successor documents.

3. An applicant, owner and/or operator of a salt cavern being solution-mined for conversion to E&P waste disposal should become familiar with these rules and regulations to assure that the well and salt cavern shall comply with these rules and regulations.

B. Prohibition of Unauthorized Disposal of Exploration and Production Waste

1. Construction, conversion and/or operation of a salt cavern for disposal of E&P waste without obtaining a permit from the Office of Conservation is a violation of these rules and regulations and applicable laws of the state of Louisiana.

2. Any salt cavern well or salt cavern existing before the effective date of these Rules must comply with the requirements of these rules and regulations before converting the existing well and salt cavern to E&P waste disposal.

C. Prohibition on Movement of Fluids into Underground Sources of Drinking Water

1. No authorization by permit shall allow the movement of injected or disposed fluids into underground sources of drinking water or outside the salt stock. The owner or operator of the salt cavern waste disposal facility shall have the burden of showing that this requirement is met.

2. The Office of Conservation may take emergency action upon receiving information that injected or disposed fluid is present in or likely to enter an underground source of drinking water or may present an imminent and substantial endangerment to the environment, or the health, safety and welfare of the public.

D. Prohibition of Surface Discharges. The intentional, accidental, or otherwise unauthorized discharge of fluids, wastes, or process materials into manmade or natural drainage systems or directly into waters of the State is strictly prohibited.

E. Identification of Underground Sources of Drinking Water and Exempted Aquifers

1. The Office of Conservation may identify (by narrative description, illustrations, maps, or other means) and shall protect as an underground source of drinking water, except where exempted under §3103.E.2 all aquifers or parts of aquifers that meet the definition of an underground source of drinking water. Even if an aquifer has not been specifically identified by the Office of Conservation, it is an underground source of drinking water if it meets the definition.

2. After notice and opportunity for a public hearing, the Office of Conservation may identify (by narrative description, illustrations, maps, or other means) and describe in geographic and/or geometric terms (such as vertical and lateral limits and gradient) that are clear and definite, all aquifers or parts thereof that the Office of Conservation proposes to denote as exempted aquifers if they meet the following criteria:

a. the aquifer does not currently serve as a source of drinking water; and

b. the aquifer cannot now and shall not in the future serve as a source of drinking water because:

i. it is mineral, hydrocarbon, or geothermal energy producing or can be demonstrated to contain minerals or hydrocarbons that when considering their quantity and location are expected to be commercially producible;

ii. it is situated at a depth or location that makes recovery of water for drinking water purposes economically or technologically impractical;

iii. it is so contaminated that it would be economically or technologically impractical to render said water fit for human consumption; or

iv. it is located in an area subject to severe subsidence or catastrophic collapse; or

c. the total dissolved solids content of the groundwater is more than 3,000 mg/l and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.

F. Exceptions/Variances

1. Except where noted in specific provisions of these rules and regulations, the Office of Conservation may allow, on a case-by-case basis, exceptions or variances to these rules and regulations. It shall be the obligation of the applicant, owner, or operator to show that the requested exception or variance shall not create an increased endangerment to the environment, or the health, safety and welfare of the public. The applicant, owner, or operator shall submit a written request to the Office of Conservation detailing the reason for the requested exception or variance. No deviation from the requirements of these rules or regulations shall be undertaken by the applicant, owner, or operator without prior written authorization from the Office of Conservation.

2. Granting of exceptions or variances to these rules and regulations shall only be considered upon proper showing by the applicant, owner, or operator at a public hearing that such exception or variance is reasonable, justified by the particular circumstances, and consistent with the intent of these rules and regulations regarding physical and environmental safety and the prevention of waste. The requester of the exception or variance shall be responsible for all costs associated with a public hearing.

G. Prohibition through Oilfield Site Restoration Fund. Without exception or variance to these rules and regulations, no solution-mined salt cavern or associated well shall be used for exploration and production waste disposal if the well or salt cavern was previously plugged and abandoned by or where site restoration has occurred pursuant to funding provided through the Oilfield Site Restoration Fund, R.S. 30:80 et seq. (Act 404 of 1993).

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:916 (June 2003).

§3105. Permit Requirements

A. Applicability. No person shall convert or operate a non-commercial salt cavern waste disposal facility without first obtaining written authorization (permit) from the Office of Conservation.

B. Application Required. Applicants for a non-commercial salt cavern waste disposal facility, permittees with expiring permits, or any person required to have a permit shall complete, sign, and submit one original application form with required attachments and documentation and two copies of the same to the Office of Conservation. The complete application shall contain all information necessary to show compliance with applicable State laws and these regulations.

C. Who Applies. It is the duty of the owner or proposed owner of a facility or activity to submit a permit application and obtain a permit. When a facility or activity is owned by one person and operated by another, it is the duty of the operator to file and obtain a permit.

D. Signature Requirements. All permit applications shall be signed as follows.

1. Corporations. By a principle executive officer of at least the level of vice-president, or duly authorized representative of that person if the representative performs similar policy making functions for the corporation. A person is a duly authorized representative only if:

a. the authorization is made in writing by a principle executive officer of at least the level of vice-president;

b. the authorization specifies either an individual or position having responsibility for the overall operation of the salt cavern waste disposal facility, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and

c. the written authorization is submitted to the Office of Conservation.

2. Partnership or Sole Proprietorship. By a general partner or proprietor, respectively; or

3. Public Agency. By either a principle executive officer or a ranking elected official of a municipality, state, federal, or other public agency.

E. Signature Reauthorization. If an authorization under §3105.D is no longer accurate because a different individual or position has responsibility for the overall operation of the salt cavern waste disposal facility, a new authorization satisfying the signature requirements must be submitted to the Office of Conservation before or concurrent with any reports, information, or applications required to be signed by an authorized representative.

F. Certification. Any person signing a document under §3105.D shall make the following certification on the application:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:917 (June 2003).

§3107. Application Content

A. The following minimum information required in §3107 shall be submitted in a permit application for a non-commercial salt cavern E&P waste disposal facility. The applicant shall also refer to the appropriate application form for any additional information that may be required.

B. Administrative Information:

1. all required state application form(s);

2. the nonrefundable application fee(s) and public hearing fee;

3. the name, mailing address, and physical address of the salt cavern waste disposal facility;

4. the operator's name, address and telephone number;

5. ownership status as federal, state, private, public, or other entity;

6. a brief description of the nature of the business associated with the activity;

7. list of all permits or construction approvals that the applicant has received or applied for and which specifically affect the legal or technical ability of the applicant to undertake the activity or activities to be conducted by the applicant under the permit being sought;

8. a copy of the title to the property for the salt cavern waste disposal facility. If a lease, option to lease, or other agreement is in effect on the property, a copy of this instrument shall be included with the application;

9. acknowledgment as to whether the facility is located on Indian lands or other lands under the jurisdiction or protection of the federal government, or whether the facility is located on state water bottoms or other lands owned by or under the jurisdiction or protection of the State of Louisiana;

10. documentation of financial responsibility and insurance or documentation of the method by which proof of financial responsibility and insurance will be provided as required in §3109.B. Where applicable, include copies of a draft letter of credit, bond, or any other evidence of financial responsibility acceptable to the Office of Conservation. Before making a final permit decision, final (official) documentation of financial responsibility and insurance must be submitted to and approved by the Office of Conservation;

11. names and addresses of all property owners within a 1/2 mile radius of the property boundary of the salt cavern waste disposal facility.

C. Maps and Related Information

1. a location plat of the salt cavern well prepared and certified by a registered civil engineer or registered land surveyor. The location plat shall be prepared according to standards of the Office of Conservation;

2. a topographic or other map extending at least one mile beyond the property boundaries of the salt cavern waste disposal facility depicting the facility and each well where fluids are injected underground; and those wells, springs, or surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant in the map area;

3. the section, township and range of the area in which the salt cavern waste disposal facility is located and any parish, city or municipality boundary lines within one mile of the facility location;

4. a map showing the salt cavern well for which the permit is sought, the property boundaries of the salt cavern waste disposal facility, and the area of review. Within the area of review, the map shall show the number, name, and location of all existing producing wells, injection wells, abandoned wells and dry holes, public water systems and water wells. The map shall also show surface bodies of water, mines (surface and subsurface), quarries, and other pertinent surface features including residences and roads, and faults if known or projected;

5. maps and cross sections indicating the vertical limits of all underground sources of drinking water within the area of review, their position relative to the disposal formation, and the direction of water movement, where known, in every underground source of drinking water which may be affected by the proposed project;

6. generalized maps and cross sections illustrating the regional geologic setting;

7. structure contour mapping of the top-of-salt on a scale no smaller than 1 inch to 500 feet;

8. vertical cross sections detailing the geologic structure of the local area. The cross sections shall be structural (as opposed to stratigraphic cross sections), be referenced to sea level, show the salt cavern well and the salt cavern being permitted, all surrounding salt caverns regardless of use and current status, conventional (room and pillar) mines, and all other bore holes and wells that penetrate the salt stock. Cross sections should be oriented to indicate the closest approach to surrounding salt caverns, bore holes, wells, etc., and shall extend at least 1-mile beyond the edge of the salt stock. Any faulting in the area shall be illustrated on the cross sections such that the displacement of subsurface formations is accurately depicted; and

9. any other information required by the Office of Conservation to evaluate the salt cavern well, salt cavern, and related surface facility.

D. Area of Review Information. Refer to §3115.E for area of review boundaries and exceptions. Only information of public record need be researched or submitted with the application, however, a diligent effort must be made to identify all wells and other manmade structures in response to the area of review requirements. The applicant shall provide the following information on all wells or structures within the defined area of review:

1. a discussion of the protocol used by the applicant to identify wells and manmade structures in the defined area of review;

2. a tabular listing of all known water wells in the area of review to include the name of the operator, well location, well depth, well use (domestic, irrigation, public, etc), and current well status (active, abandoned, etc.);

3. a tabular listing of all known wells (excluding water wells) in the area of review with penetrations into the cap rock or salt stock to include at a minimum:

a. operator name, well name and number, state serial number (if assigned), and well location;

b. well type and current well status (producing, disposal, storage, solution mining, shut-in, plugged and abandoned), date the well was drilled, and the date the current well status was assigned;

c. well depth, construction, completion (including completion depths), plug and abandonment data;

4. the following information shall be provided on manmade structures within the salt stock regardless of use, depth of penetration, or distance to the salt cavern well or salt cavern being the subject of the application:

a. a tabular listing of all salt caverns to include:

i. operator name, well name and number, state serial number, and well location;

ii. current or previous use of the salt cavern (waste disposal, hydrocarbon storage, solution mining), current status of the salt cavern (active, shut-in, plugged and abandoned), date the salt cavern well was drilled, and the date the current salt cavern status was assigned;

iii. salt cavern depth, construction, completion (including completion depths), plug and abandonment data;

b. a tabular listing of all conventional (dry or room and pillar) mining activities, whether active or abandoned. The listing shall include the following minimum items:

i. owner or operator name and address;

ii. current mine status (active, abandoned);

iii. depth and boundaries of mined levels;

iv. the closest distance of the mine in any direction to the salt cavern well and salt cavern.

E. Technical Information. The applicant shall submit, as an attachment to the application form, the following minimum information in technical report format:

1. results of a current salt cavern sonar survey and mechanical integrity pressure and leak tests;

2. corrective action plan required by §3115.F for wells or other manmade structures within the area of review that penetrate the salt stock but are not properly constructed, completed or plugged and abandoned;

3. plans for performing the geological and hydrogeological studies of §3115.B, C, and D. If such studies have already been done, submit the results obtained along with an interpretation of the results;

4. properly labeled schematic of the surface construction details of the salt cavern well to include the wellhead, gauges, flowlines, and any other pertinent details;

5. properly labeled schematic of the subsurface construction and completion details of the salt cavern well and salt cavern to include borehole diameters (bit size or calipered); all cemented casings with cement specifications, casing specifications (size, depths, etc.); all hanging strings showing sizes and depths set; total depth of well; top, bottom, and diameter of cavern; and any other pertinent details;

6. surface site diagram(s) drawn to scale to include details and locations of the entire salt cavern waste disposal facility layout (surface pumps, piping and instrumentation, controlled access roads, fenced boundaries, waste offloading, storage, treatment and processing areas, field office, monitoring and safety equipment and location of such equipment, required curbed or other retaining wall heights, etc.);

7. detailed plans and procedures to operate the salt cavern well, salt cavern, and related surface facilities in accordance with the following requirements:

a. the cavern and surface facility design requirements of §3117, including, but not limited to cavern spacing requirements and cavern coalescence;

b. the well construction and completion requirements of §3119, including, but not limited to open borehole surveys, casing and cementing, casing and casing seat tests, cased borehole surveys, hanging strings, and wellhead components and related connections;

c. the operating requirements of §3121, including, but not limited to cavern roof restrictions, blanket material, remedial work, well recompletion, multiple well caverns, cavern allowable operating pressure and rates, cavern displacement fluid management, and E&P waste storage;

d. the safety requirements of §3123, including, but not limited to an emergency action plan, controlled site access, facility identification, personnel, wellhead protection and identification, valves and flowlines, alarm systems, emergency shutdown valves, vapor monitoring and leak detection, gaseous vapor control, fire detection and suppression, systems test and inspections, and surface facility retaining walls and spill containment, as well as contingency plans to cope with all shut-ins or well failures to prevent the migration of contaminating fluids into underground sources of drinking water;

e. the monitoring requirements of §3125, including, but not limited to equipment requirements such as pressure gauges, pressure sensors and flow sensors, continuous recording instruments, vapor monitoring and leak detection, subsidence monitoring, and weather conditions (wind sock), as well as a description of methods that will be undertaken to monitor salt cavern growth due to undersaturated fluid injection. The plan shall incorporate method(s) for monitoring the salinity of all wastes disposed and the carrier fluid used in aiding the disposal of wastes;

f. the pre-operating requirements of §3127, specifically the submission of a completion report, and the information required therein, prior to accepting, storing, treating, processing or otherwise initiating waste disposal activities;

g. the mechanical integrity pressure and leak test requirements of §3129, including, but not limited to frequency of tests, test methods, submission of pressure and leak test results, notification of test failures and prohibition of waste acceptance during mechanical integrity failure;

h. the cavern configuration and capacity measurement procedures of §3131, including, but not limited to sonar caliper surveys, frequency of surveys, and submission of survey results;

i. the cavern waste disposal capacity exceedance requirements of §3133;

j. the requirements for inactive caverns in §3135;

k. the reporting requirements of §3137, including, but not limited to the information required in monthly waste receipts and operation reports;

l. the record retention requirements of §3139;

m. the closure and post-closure requirements of §3141, including, but not limited to closure plan requirements, notice of intent to close, standards for closure, and post-closure requirements; and

n. any other information pertinent to operation of the salt cavern E&P waste disposal facility, including, but not limited to procedures for waste characterization and testing, waste acceptance, waste storage, waste processing, waste disposal, any waiver for surface siting, monitoring equipment and safety procedures.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:918 (June 2003).

§3109. Legal Permit Conditions

A. Signatories. All reports required by permit or regulation and other information requested by the Office of Conservation shall be signed as in applications by a person described in §3105.D or §3105.E.

B. Financial Responsibility

1. Closure and Post-Closure. The owner or operator of a non-commercial salt cavern E&P waste disposal facility shall maintain financial responsibility and the resources to close, plug and abandon and, where necessary, for post-closure care of the salt cavern well, salt cavern, and related facility as prescribed by the Office of Conservation. Evidence of financial responsibility shall be by submission of a surety bond, a letter of credit, certificate of deposit, or other instruments acceptable to the Office of Conservation. The amount of funds available shall be no less than the amount identified in the cost estimate of the closure plan of §3141.A and, if required, post-closure plan of §3141.B. Any financial instrument filed in satisfaction of these financial responsibility requirements shall be issued by and drawn on a bank or other financial institution authorized under state or federal law to operate in the state of Louisiana.

2. Insurance. All owners or operators of a salt cavern waste disposal facility shall provide evidence of sudden and accidental pollution liability insurance coverage for damages that may be caused to any property and party by the escape or discharge of any material or waste from the facility. Such evidence shall be provided to the Office of Conservation before the issuance of a permit for a salt cavern waste disposal facility.

a. Insurance responsibility may be evidenced by filing a certificate of sudden and accidental pollution liability insurance (indicating the required coverage is in effect and all deductible amounts applicable to the coverage), a letter of credit, bond, certificate of deposits issued by and drawn on Louisiana banks, or any other evidence of equivalent financial responsibility acceptable to the Office of Conservation.

b. The amount and extent of such sudden and accidental pollution liability insurance responsibility shall not be less than the face amounts per occurrence and/or aggregate occurrences as set by the Office of Conservation. The minimum coverage for sudden and accidental pollution liability insurance shall be $5,000,000. The Office of Conservation retains the right to increase the minimum amount of insurance coverage as needed to prevent waste and to protect the environment, or the health, safety and welfare of the public.

c. Insurance coverage shall be issued by a company licensed to operate in the state of Louisiana. A copy of the insurance policy subsequently issued with any certificate of insurance is to be immediately filed with the Office of Conservation upon receipt by the operator.

3. Renewal of Financial Responsibility and Insurance. Any approved instrument of financial responsibility and insurance coverage shall be renewable yearly. Documentation of renewals shall be submitted to the Office of Conservation.

C. Duty to Comply. The operator must comply with all conditions of a permit. Any permit noncompliance is a violation of the permit and these rules and regulations and is grounds for enforcement action, permit termination, revocation and possible reissuance, modification, or denial of any future permit renewal applications. It shall be the duty of the operator to prove that continued operation of the salt cavern waste disposal facility shall not endanger the environment, or the health, safety and welfare of the public.

D. Duty to Halt or Reduce Activity. It shall not be a defense for an owner or operator in an enforcement action to claim it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of the permit.

E. Duty to Mitigate. The owner or operator shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from a noncompliance with the permit or these rules and regulations.

F. Proper Operation and Maintenance

1. The operator shall always properly operate and maintain all facilities and systems of storage, treatment, disposal, injection, withdrawal, and control (and related appurtenances) installed or used to achieve compliance with the permit or these rules and regulations. Proper operation and maintenance include effective performance (including well/cavern mechanical integrity), adequate funding, adequate operation, staffing and training, and adequate controls. This provision requires the operation of back-up, auxiliary facilities, or similar systems when necessary to achieve compliance with the conditions of the permit or these rules and regulations.

2. The operator shall address any unauthorized escape, discharge, or release of any material or waste from the salt cavern waste disposal facility, or part thereof, with a corrective action plan. The plan shall address the cause, delineate the extent, and determine the overall effects on the environment resulting from the escape, discharge, or release. The Office of Conservation shall require the operator to formulate a plan to remediate the escaped, discharged, or released material or waste if the material or waste is thought to have entered or has the possibility of entering an underground source of drinking water.

3. The Office of Conservation may immediately prohibit further operations if it determines that continued operations at a salt cavern waste disposal facility, or part thereof, may cause unsafe operating conditions, or endanger the environment, or the health, safety and welfare of the public. The prohibition shall remain in effect until it is determined that continued operations can and shall be conducted safely. It shall be the duty of the operator to prove that continued operation of the salt cavern waste disposal facility, or part thereof, shall not endanger the environment, or the health, safety and welfare of the public.

G. Inspection and Entry. Inspection and entry at a salt cavern waste disposal facility by Office of Conservation personnel shall be allowed as prescribed in R.S. of 1950, Title 30, Section 4.

H. Notification Requirements. The operator shall give written, and where required, verbal notice to the Office of Conservation concerning activities indicated in this Subsection.

1. Any change in the principal officers, management, owner or operator of the salt cavern waste disposal facility shall be reported to the Office of Conservation in writing within 10 days of the change.

2. Planned physical alterations or additions to the salt cavern well, salt cavern, surface facility or parts thereof that may constitute a modification or amendment of the permit.

3. Whenever there has been no disposal of waste into a salt cavern for 30 consecutive days or more, the operator shall notify the Office of Conservation in writing within seven days following the thirtieth day of the salt cavern becoming inactive (out of service). The notification shall include the date on which the salt cavern was removed from service, the reason for taking the salt cavern out of service, and the expected date that the salt cavern shall be returned to waste disposal service. See §3135 for additional requirements for inactive caverns.

4. The operator of a new or converted salt cavern well or salt cavern shall not begin waste disposal operations until the Office of Conservation has been notified of the following:

a. well construction or conversion is complete, including submission of the completion report and all supporting information (e.g., as-built diagrams, records, sampling and testing results, well and cavern tests, logs, etc.) required in §3127;

b. a representative of the commissioner has inspected the well and/or facility; and

c. the operator has received written approval from the Office of Conservation clearly stating salt cavern waste disposal operations may begin.

5. Noncompliance or anticipated noncompliance with the permit or applicable regulations including a failed mechanical integrity pressure and leak test of §3129.

6. Permit Transfer. A permit is not transferable to any person except after giving written notice to and receiving written approval from the Office of Conservation clearly stating that the permit has been transferred. This action may require modification or revocation and re-issuance of the permit to change the name of the operator and incorporate other requirements as may be necessary, including but not limited to financial responsibility.

7. Twenty-Four Hour Reporting

a. The operator shall report any noncompliance that may endanger the environment, or the health, safety and welfare of the public. Any information pertinent to the noncompliance shall be reported to the Office of Conservation by telephone within 24 hours from when the operator becomes aware of the circumstances. A written submission shall also be provided within five days from when the operator becomes aware of the circumstances. The written notification shall contain a description of the noncompliance and its cause, the periods of noncompliance including exact times and dates, and if the noncompliance has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance.

b. The following additional information must also be reported within the 24-hour period:

i. monitoring or other information (including a failed mechanical integrity test of §3129) that suggests the waste disposal operation or disposed waste may cause an endangerment to underground sources of drinking waters, oil, gas, other commercial mineral deposits (excluding the salt), neighboring salt operations of any kind, or movement outside the salt stock or salt cavern;

ii. any noncompliance with a regulatory or permit condition or malfunction of the waste injection/withdrawal system (including a failed mechanical integrity test of §3129) that may cause fluid migration into or between underground sources of drinking waters or outside the salt stock or salt cavern.

8. The operator shall give written notification to the Office of Conservation upon permanent conclusion of waste disposal operations into a salt cavern. Notification shall be given within seven days after concluding disposal operations.

9. The operator shall give written notification before abandonment (closure) of the salt cavern, salt cavern well, or related surface facility. Abandonment (closure) shall not begin before receiving written authorization from the Office of Conservation.

10. When the operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Office of Conservation, the operator shall promptly submit such facts and information.

I. Duration of Permits

1. Authorization to Operate. Authorization by permit to operate a salt cavern waste disposal facility shall be valid for the life of the facility, unless suspended, modified, revoked and reissued, or terminated for cause as described in §3111.K.

2. Authorization to Drill and Complete. Authorization by permit to drill and complete a new salt cavern well into an existing salt cavern shall be valid for one year from the effective date of the permit. If drilling and well completion is not completed in that time, the permit shall be null and void and the operator must obtain a new permit.

3. Authorization to Convert. Authorization by permit to convert an existing salt cavern well or salt cavern to waste disposal shall remain in effect for six months from the effective date of the conversion permit. If conversion has not begun within that time, the permit shall be null and void and the operator must obtain a new permit.

4. Extensions. The operator shall submit to the Office of Conservation a written request for an extension of the times of §3109.I.2 and §3109.I.3; however, the Office of Conservation shall approve the request only for extenuating circumstances. The operator shall have the burden of proving claims of extenuating circumstances.

J. Compliance Review. Cavern disposal facility permits shall be reviewed at least once every five years to determine compliance with applicable permit requirements and conditions. Commencement of the permit review process for each facility shall proceed as authorized by the Commissioner of Conservation.

K. Additional Conditions. The Office of Conservation may, on a case-by-case basis, impose any additional conditions or requirements as are necessary to protect the environment, the health, safety and welfare of the public, underground sources of drinking waters, oil, gas, or other mineral deposits (excluding the salt), and preserve the integrity of the salt dome.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:920 (June 2003).

§3111. Permitting Process

A. Applicability. This Section contains procedures for issuing and transferring permits to operate a non-commercial salt cavern waste disposal facility. Any person required to have a permit shall apply to the Office of Conservation as stipulated in §3105. The Office of Conservation shall not issue a permit before receiving an application form and any required supplemental information showing compliance with these rules and regulations and that is administratively and technically completed to the satisfaction of the Office of Conservation.

B. Notice of Intent to File Application

1. The applicant shall make public notice that a permit application is to be filed with the Office of Conservation. A notice of intent shall be published at least 30 days but not more than 120 days before filing the permit application with the Office of Conservation. The applicant shall publish a new notice of intent if the application is not received by the Office of Conservation within the filing period.

2. The notice shall be published once in the official state journal, the official journal of the parish of the proposed project location, and, if different from the official parish journal, in a journal of general circulation in the area of the proposed project location. The cost for publishing the notice of intent shall be the responsibility of the applicant. The notice shall be published in bold-faced type, be not less than 1/4 page in size, and shall contain the following minimum information:

a. name and address of the permit applicant and, if different, the facility to be regulated by the permit;

b. the geographic location of the proposed project;

c. name and address of the regulatory agency to process the permit action where interested persons may obtain information concerning the application or permit action;

d. a brief description of the business conducted at the facility or activity described in the permit application including the method of storage, treatment, and/or disposal; and

e. the nature and content of the proposed waste stream(s).

C. Application Submission and Review

1. The applicant shall complete, sign, and submit one original application form, with required attachments and documentation, and two copies of the same to the Office of Conservation. The complete application shall contain all information to show compliance with applicable state laws and these rules and regulations.

2. The applicant shall be notified if a representative of the Office of Conservation decides that a site visit is necessary for any reason in conjunction with the processing of the application. Notification may be either oral or written and shall state the reason for the visit.

3. If the Office of Conservation deems an application to be incomplete, deficient of information, or requires additional data, a notice of application deficiency indicating the information necessary to make the application complete shall be transmitted to the applicant.

4. The Office of Conservation shall deny an application if an applicant fails, refuses, is unable to respond adequately to the notice of application deficiency, or if the Office of Conservation determines that the proposed activity cannot be conducted safely. The Office of Conservation shall notify the applicant by certified mail of the decision denying the application.

D. Public Hearing Requirements. A public hearing is required for new applications and shall not be scheduled until administrative and technical review of an application has been completed to the satisfaction of the Office of Conservation.

1. Notice by Office of Conservation

a. Upon acceptance of a permit application as complete and meeting the administrative and technical requirements of these rules and regulations, the Office of Conservation shall fix a time, date, and location for a public hearing. The public hearing shall be held in the parish of the proposed project location. The cost of the public hearing shall be set by LAC 43:XIX.Chapter 7 (Fees, as amended) and is the responsibility of the applicant.

b. The Office of Conservation shall provide notice of a scheduled hearing by mailing a copy of the notice to the applicant, property owners immediately adjacent to the proposed project, operators of existing projects located on or within the salt stock of the proposed project; United States Environmental Protection Agency; Louisiana Department of Wildlife and Fisheries; Louisiana Department of Environmental Quality; Louisiana Office of Coastal Management; Louisiana Office of Conservation, Pipeline Division, Louisiana Department of Culture, Recreation and Tourism, Division of Archaeology; the governing authority for the parish of the proposed project; and any other interested parties.

2. Notice by Applicant

a. Public notice of a hearing shall be published by the applicant in the legal ad section of the official state journal, the official journal of the parish of the proposed project location, and, if different from the official parish journal, in a journal of general circulation in the area of the proposed project location, not less than 30 days before the scheduled hearing.

b. The applicant shall file at least one copy of the complete permit application with the local governing authority of the parish of the proposed project location at least 30 days before the scheduled public hearing to be available for public review.

c. One additional copy of the complete permit application shall be filed by the applicant in a public library in the parish and in close proximity to the proposed project location.

3. Contents. Public notices shall contain the following minimum information:

a. name and address of the permit applicant and, if different, the facility or activity regulated by the permit;

b. name and address of the regulatory agency processing the permit action;

c. name, address, and phone number of a person within the regulatory agency where interested persons may obtain information concerning the application or permit action;

d. a brief description of the business conducted at the facility or activity described in the permit application;

e. a brief description of the public comment procedures and the time and place of the public hearing;

f. a brief description of the nature and purpose of the public hearing.

E. Draft Permit. The Office of Conservation shall prepare a draft permit (Order) after accepting a permit application as meeting the administrative and technical requirements of these rules and regulations. Draft permits shall be accompanied by a fact sheet, be publicly noticed, and made available for public comment.

F. Fact Sheet. The Office of Conservation shall prepare a fact sheet for every draft permit. It shall briefly set forth principal facts and significant factual, legal, and policy questions considered in preparing the draft permit.

1. The fact sheet may include:

a. a brief description of the type of facility or activity that is the subject of the draft permit or application;

b. the type and proposed quantity of material to be injected;

c. a brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provision;

d. a description of the procedures for reaching a final decision on the draft permit or application including the ending date of the public comment period of §3111.H, the address where comments shall be received, and any other procedures whereby the public may participate in the final decision;

e. the name and telephone number of a person within the permitting agency to contact for additional information.

2. The fact sheet shall be distributed to the permit applicant and, on request, to any interested person.

G. Public Hearing. Public hearings for permitting activities shall be held in the parish of the proposed project location. The cost of the public hearing shall be the responsibility of the applicant.

1. The public hearing shall be fact finding in nature and not subject to the procedural requirements of the Louisiana Administrative Procedure Act. All public hearings shall be publicly noticed as required by these rules and regulations.

2. At the hearing, any person may make oral statements or submit written statements and data concerning the application or permit action being the basis of the hearing. Reasonable limits may be set upon the time allowed for oral statements; therefore, submission of written statements may be required. The hearing officer may extend the comment period by so stating before the close of the hearing.

3. A transcript shall be made of the hearing and such transcript shall be available for public review.

H. Public Comments, Response to Comments, and Permit Issuance

1. Any interested person may submit written comments concerning the permitting activity during the public comment period. All comments pertinent and significant to the permitting activity shall be considered in making the final permit decision.

2. The Office of Conservation shall issue a response to all pertinent and significant comments as an attachment to and at the time of final permit decision. The final permit with response to comments shall be made available to the public.

3. The Office of Conservation shall issue a final permit decision within 90 days following the close of the public comment period; however, this time may be extended due to the nature, complexity, and volume of public comments received.

4. A final permit decision shall be effective on the date of issuance.

5. Approval or the granting of a permit to construct a salt cavern waste disposal facility or salt cavern well shall not become final until a certified copy of a lease or proof of ownership of the property of the proposed project location is submitted to the Office of Conservation.

I. Permit Application Denial

1. The Office of Conservation may refuse to issue, reissue, or reinstate a permit or authorization if an applicant or operator has delinquent, finally determined violations of the Office of Conservation or unpaid penalties or fees, or if a history of past violations demonstrates the applicant's or operator's unwillingness to comply with permit or regulatory requirements.

2. If a permit application is denied, the applicant may request a review of the Office of Conservation's decision to deny the permit application. Such request shall be made in writing and shall contain facts or reasons supporting the request for review.

3. Grounds for permit application denial review shall be limited to the following reasons:

a. the decision is contrary to the laws of the state, applicable regulations, or evidence presented in or as a supplement to the permit application;

b. the applicant has discovered since the permit application public hearing or permit denial, evidence important to the issues that the applicant could not with due diligence have obtained before or during the initial permit application review;

c. there is a showing that issues not previously considered should be examined so as to dispose of the matter; or

d. there is other good ground for further consideration of the issues and evidence in the public interest.

J. Permit Transfer

1. Applicability. A permit may be transferred to a new owner or operator only upon written approval from the Office of Conservation. Written approval must clearly read that the permit has been transferred. It is a violation of these rules and regulations to operate a salt cavern waste disposal facility without a permit or other authorization if a person attempting to acquire a permit transfer allows operation of the salt cavern waste disposal facility before receiving written approval from the Office of Conservation.

2. Procedures

a. The proposed new owner or operator must apply for and receive an operator code by submitting a completed Organization Report (Form OR-1), or subsequent form, to the Office of Conservation.

b. The current operator shall submit an application for permit transfer at least 30 days before the proposed permit transfer date. The application shall contain the following:

i. name and address of the proposed new owner or operator;

ii. date of proposed permit transfer; and

iii. a written agreement between the existing and new owner or operator containing a specific date for transfer of permit responsibility, insurance coverage, financial responsibility, and liability between them.

c. If no agreement described in §3111.J.2.b.iii above is provided, responsibility for compliance with the terms and conditions of the permit and liability for any violation will shift from the existing operator to the new operator on the date the transfer is approved.

d. The new operator shall submit an application for a change of operator using Form MD-10-R-A, or subsequent form, to the Office of Conservation containing the signatories of §3105.D and E along with the appropriate filing fee.

e. The new operator shall submit evidence of financial responsibility under §3109.B.

f. Any additional information as may be required to be submitted by these regulations or the Office of Conservation.

K. Permit Suspension, Modification, Revocation and Reissuance, Termination. This subsection sets forth the standards and requirements for applications and actions concerning suspension, modification, revocation and reissuance, termination, and renewal of permits. A draft permit must be prepared and other applicable procedures must be followed if a permit modification satisfies the criteria of this subsection. A draft permit, public notification, or public participation is not required for minor permit modifications of §3111.K.5.

1. Permit Actions

a. The permit may be suspended, modified, revoked and reissued, or terminated for cause.

b. The operator shall furnish the Office of Conservation within a predetermined time any information that the Office of Conservation may request to determine whether cause exists for suspending, modifying, revoking and reissuing, or terminating a permit, or to determine compliance with the permit. Upon request, the operator shall furnish the Office of Conservation with copies of records required to be kept by the permit.

c. The Office of Conservation may, upon its own initiative or at the request of any interested person, review any permit to determine if cause exists to suspend, modify, revoke and reissue, or terminate the permit for the reasons specified in §§3111.K.2, 3, 4, 5, and 6. All requests shall be in writing and shall contain facts or reasons supporting the request.

d. If the Office of Conservation decides the request is not justified, the person making the request shall be sent a brief written response giving a reason for the decision. Denials of requests for suspension, modification, revocation and reissuance, or termination are not subject to public notice, public comment, or public hearings.

e. If the Office of Conservation decides to suspend, modify or revoke and reissue a permit under §3111.K.2, 3, 4, 5, and 6, additional information may be requested and, in the case of a modified permit, may require the submission of an updated permit application. In the case of revoked and reissued permits, the Office of Conservation shall require the submission of a new application.

f. The suitability of an existing salt cavern well, salt cavern, or salt cavern waste disposal facility location shall not be considered at the time of permit modification or revocation and reissuance unless new information or standards suggest continued operation at the site endangers the environment, or the health, safety and welfare of the public which was unknown at the time of permit issuance. If the salt cavern well, salt cavern, or salt cavern waste disposal facility location is no longer suitable for its intended purpose, it shall be closed according to applicable sections of these rules and regulations.

2. Suspension of Permit. The Office of Conservation may suspend the operator's right to accept additional E&P wastes, or to treat, process, store, or dispose such waste until violations are corrected. If violations are corrected, the Office of Conservation may lift the suspension. Suspension of a permit and/or subsequent corrections of the causes for the suspension by the operator shall not preclude the Office of Conservation from terminating the permit, if necessary. The Office of Conservation shall issue a Notice of Violation (NOV) to the operator, by certified mail, return receipt requested, of violations of the permit or these regulations that list the specific violations. If the operator fails to comply with the NOV by correcting the cited violations within the date specified in the NOV, the Office of Conservation shall issue a Compliance Order requiring the violations to be corrected within a specified time and may include an assessment of civil penalties. If the operator fails to take corrective action within the time specified in the Compliance Order, the Office of Conservation shall assess a civil penalty, and shall suspend, revoke, or terminate the permit.

3. Modification or Revocation and Reissuance of Permits. The following are causes for modification and may be causes for revocation and reissuance of permits.

a. Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

b. Information. The Office of Conservation has received information pertinent to the permit. Permits may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. Cause shall include any information indicating that cumulative effects on the environment, or the health, safety and welfare of the public are unacceptable.

c. New Regulations

i. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued and conformance with the changed standards or regulations is necessary for the protection of the environment, or the health, safety and welfare of the public. Permits may be modified during their terms when:

(a). the permit condition requested to be modified was based on a promulgated regulation or guideline;

(b). there has been a revision, withdrawal, or modification of that portion of the regulation or guideline on which the permit condition was based; or

(c). an operator requests modification within 90 days after Louisiana Register notice of the action on which the request is based.

ii. The permit may be modified as a minor modification without providing for public comment when standards or regulations on which the permit was based have been changed by withdrawal of standards or regulations or

by promulgation of amended standards or regulations which impose less stringent requirements on the permitted activity or facility and the operator requests to have permit conditions based on the withdrawn or revised standards or regulations deleted from his permit.

iii. For judicial decisions, a court of competent jurisdiction has remanded and stayed Office of Conservation regulations or guidelines and all appeals have been exhausted, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the operator to have permit conditions based on the remanded or stayed standards or regulations deleted from his permit.

d. Compliance Schedules. The Office of Conservation determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the operator has little or no control and for which there is no reasonable available remedy.

4. Causes for Modification or Revocation and Reissuance. The following are causes to modify or, alternatively, revoke and reissue a permit.

a. Cause exists for termination under §3111.K.6, and the Office of Conservation determines that modification or revocation and reissuance is appropriate.

b. The Office of Conservation has received notification of a proposed transfer of the permit and the transfer is determined not to be a minor permit modification.

c. A determination that the waste being disposed into a salt cavern is not E&P waste as defined in §3101 or LAC 43:XIX.501, or subsequent revisions, either because the definition has been revised or because a previous determination has been changed.

5. Minor Modifications of Permits. The Office of Conservation may modify a permit to make corrections or allowances for changes in the permitted activity listed in this subsection without issuing a draft permit and providing for public participation. Minor modifications may only:

a. correct administrative or make informational changes;

b. correct typographical errors;

c. amend the frequency of or procedures for monitoring, reporting, sampling, or maintenance activities;

d. change an interim compliance date in a schedule of compliance, provided the new date does not interfere with attainment of the final compliance date requirement;

e. allow for a change in ownership or operational control of a salt cavern waste disposal facility where the Office of Conservation determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Office of Conservation;

f. change quantities or types of waste or other material disposed into the salt cavern which are within the capacity of the salt cavern waste disposal facility and, in the judgement of the Office of Conservation, would not interfere with the operation of the facility or its ability to meet other conditions prescribed in the permit, and would not change the waste classification of the disposed material;

g. change construction requirements or plans approved by the Office of Conservation provided that any such alteration is in compliance with these rules and regulations. No such changes may be physically incorporated into construction of the salt cavern well, salt cavern, or surface facility before written approval from the Office of Conservation; or

h. amend a closure or post-closure plan.

6. Termination of Permits

a. The Office of Conservation may terminate a permit during its term for the following causes:

i. noncompliance by the operator with any condition of the permit;

ii. the operator's failure in the application or during the permit issuance process to fully disclose all relevant facts, or the operator's misrepresentation of any relevant facts at any time; or

iii. a determination that continued operation of the permitted activity cannot be conducted in a way that is protective of the environment, or the health, safety and welfare of the public.

b. If the Office of Conservation decides to terminate a permit, such shall only be done after a public hearing.

c. The Office of Conservation may alternatively decide to modify or revoke and reissue a permit for the causes in §3111.K.6.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:922 (June 2003).

§3113. Location Criteria

A. No physical structure at a salt cavern waste disposal facility shall be located within 500 feet of a residential, commercial, or public building. Adherence to this requirement may be waived by the owner of the building. For a public building, the waiver shall be provided by the responsible administrative body. Any such waiver shall be in writing and be made part of the permit application. Examples of physical structures include, but are not limited to, the wellhead of the salt cavern well, waste storage, waste transfer and waste processing areas, onsite buildings, pumps, etc. An exception to the 500-foot restriction may be granted upon request for the placement of instruments or equipment required for safety or environmental monitoring.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:925 (June 2003).

§3115. Site Assessment

A. Applicability. This section applies to all applicants, owners and/or operators of salt cavern waste disposal facilities. The applicant, owner and/or operator shall be responsible for showing that disposal of E&P wastes into the salt cavern shall be accomplished using good engineering and geologic practices for salt cavern operations to preserve the integrity of the salt stock and overlying sediments. This shall include, but not be limited to:

1. an assessment of the geological, geomechanical, geochemical, geophysical properties of the salt stock;

2. stability of the salt cavern design (particularly regarding its size, shape, depth, and operating parameters);

3. physical and chemical characteristics of the waste;

4. the amount of separation between the salt cavern of interest and adjacent caverns and structures within the salt stock; and

5. the amount of separation between the outermost salt cavern wall and the periphery of the salt stock.

B. Geological Studies and Evaluations. The applicant shall do a thorough geological, geophysical, geomechanical, and geochemical evaluation of the salt stock to determine its suitability for waste disposal, stability of the salt cavern under the proposed set of operating conditions, and where applicable, the structural integrity of the salt stock between an adjacent cavern and salt periphery under the proposed set of operating conditions. The applicant shall provide a listing of data or information used to characterize the structure and geometry of the salt stock.

1. Where applicable, the geologic evaluation shall include, but should not be limited to:

a. geologic mapping of the structure of the salt stock and any cap rock;

b. geologic history of salt movement;

c. an assessment of the impact of possible anomalous zones (salt spines, shear planes, etc.) on the salt cavern well or salt cavern;

d. deformation of the cap rock and strata overlying the salt stock;

e. investigation of the upper salt surface and adjacent areas involved with salt dissolution;

f. cap rock formation and any non-vertical salt movement.

2. The applicant shall perform a thorough hydrogeological study on strata overlying the salt stock to determine the occurrence of the lowermost underground source of drinking water immediately above and in the vicinity of the salt stock.

3. The applicant shall investigate regional tectonic activity and the potential impact (including ground subsidence) of the waste disposal project on surface and subsurface resources.

C. Core Sampling

1. At least one well at the site of the salt cavern waste disposal facility (or the salt dome) shall be or shall have been cored over sufficient depth intervals to yield representative samples of the subsurface geologic environment. This shall include coring of the salt stock and may include coring of overlying formations, including any cap rock. Cores should be obtained using the whole core method. Core acquisition, core handling, and core preservation shall be done according to standard field sampling practices considered acceptable for laboratory tests of recovered cores.

2. Data from previous coring projects may be used instead of actual core sampling provided the data is specific to the salt dome of interest. If site-specific data is unavailable, data may be obtained from sources that are not specific to the area as long as the data can be shown to closely approximate the properties of the salt dome of interest. It shall be the responsibility of the applicant to make a satisfactory demonstration that data obtained from other sources are applicable to the salt dome of interest.

D. Core Analyses and Laboratory Tests. Analyses and tests shall consider the characteristics of the injected materials and should provide data on the salt's geomechanical, geophysical, geochemical, mineralogical properties, microstructure, and where necessary, potential for adjacent salt cavern connectivity, with emphasis on salt cavern shape and the operating conditions. All laboratory tests, experimentation, and numeric modeling shall be conducted using methods that simulate the proposed operating conditions of the salt cavern. Test methods shall be selected to define the deformation and strength properties and characteristics of the salt stock under salt cavern operating conditions.

E. Area of Review. A thorough evaluation shall be undertaken of both surface and subsurface activities in the defined area of review of the individual salt cavern well or project area that may influence the integrity of the salt stock, salt cavern well, and salt cavern, or contribute to the movement of injected fluids outside the salt cavern, wellbore, or salt stock.

1. Surface Delineation. The area of review for a salt cavern well shall be a fixed radius around the wellbore of not less than one-half mile. Exception shall be noted as shown in §§3115.E.2.c and d below.

2. Subsurface Delineation. At a minimum, the following shall be identified within the area of review:

a. all known active, inactive, and abandoned wells within the area of review with known depth of penetration into the cap rock or salt stock;

b. all known water wells within the area of review;

c. all salt caverns within the salt stock regardless of usage, depth of penetration, or distance to the proposed salt cavern well or salt cavern;

d. all conventional (dry or room and pillar) mining activity either active or abandoned occurring anywhere within the salt stock regardless of distance to the proposed salt cavern well or salt cavern.

F. Corrective Action

1. For manmade structures identified in the area of review that are not properly constructed, completed, or plugged and abandoned, the applicant shall submit a corrective action plan consisting of such steps, procedures, or modifications as are necessary to prevent the movement of fluids outside the salt cavern or into underground sources of drinking water.

a. Where the plan is adequate, the provisions of the corrective action plan shall be incorporated into the permit as a condition.

b. Where the plan is inadequate, the Office of Conservation shall require the applicant to revise the plan or the application shall be denied.

2. Any permit issued for an existing salt cavern well or salt cavern for which corrective action is required shall include a schedule of compliance for complete fulfillment of the approved corrective action procedures. If the required corrective action is not completed as prescribed in the schedule of compliance, the permit shall be suspended, modified, revoked and possibly reissued, or terminated according to these rules and regulations.

3. No permit shall be issued for a new salt cavern well until all required corrective action obligations have been fulfilled.

4. The Office of Conservation may prescribe additional requirements for corrective action beyond those submitted by the applicant.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:926 (June 2003).

§3117. Cavern and Surface Facility Design Requirements

A. This Section provides general standards for design of salt caverns to assure that project development can be conducted in a reasonable, prudent, and a systematic manner and shall stress physical and environmental safety. The cavern design shall be modified where necessary to conform with good engineering and geologic practices.

B. Cavern Spacing Requirements

1. Property Boundary. The wellhead and borehole shall be located such that the salt cavern at its maximum diameter shall not extend closer than 100 feet to the property boundary of the salt cavern waste disposal facility.

2. Adjacent Structures within the Salt. As measured in any direction, the minimum separation between walls of adjacent salt caverns or between the walls of the salt cavern and any manmade structure within the salt stock shall not be less than 200 feet.

3. Salt Periphery. Without exception or variance to these rules and regulations, the minimum separation between the walls of a salt cavern at any point and the periphery of the salt stock shall not be less than 300 feet.

C. Cavern Coalescence. The Office of Conservation may permit the use of coalesced salt caverns for waste disposal. It shall be the duty of the applicant, owner or operator to demonstrate that operation of coalesced salt caverns under the proposed cavern operating conditions can be accomplished in a physical and environmentally safe manner. The intentional subsurface coalescing of adjacent salt caverns must be requested by the applicant, owner or operator in writing and be approved by the Office of Conservation before beginning or resumption of salt cavern waste disposal operations. Approval for salt cavern coalescence shall only be considered upon a showing by the applicant, owner or operator that the stability and integrity of the salt cavern and salt stock shall not be compromised and that salt cavern waste disposal operations can be conducted in a physical and environmentally safe manner. If the design of adjacent salt caverns should include approval for the subsurface coalescing of adjacent salt caverns, the minimum spacing requirement of §3117.B.2 above shall not apply to the coalesced salt caverns.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:927 (June 2003).

§3119. Well Construction and Completion

A. General Requirements

1. All materials and equipment used in the construction of the salt cavern well and related appurtenances shall be designed and manufactured to exceed the operating requirements of the specific project. Consideration shall be given to depth and lithology of all subsurface geologic zones, corrosiveness of formation fluids, hole size, anticipated ranges and extremes of operating conditions, physical and behavioral characteristics of the injected and disposed material under the specific range of operating conditions, subsurface temperatures and pressures, type and grade of cement, and projected life of the salt cavern well.

2. All salt cavern wells and salt caverns shall be designed, constructed, completed, and operated to prevent the escape of injected or disposed materials out of the salt stock, into an underground source of drinking water, or otherwise create or cause pollution or endanger the environment or public safety. All phases of design, construction, completion, and testing shall be prepared and supervised by qualified personnel.

B. Open Borehole Surveys

1. Open hole wireline surveys that delineate subsurface lithologies, formation tops (including top of cap rock and salt), formation fluids, formation porosity, and fluid resistivities shall be done on wells from total well depth to either ground surface or base of conductor pipe. Wireline

surveys shall be presented with gamma-ray and, where applicable, spontaneous potential curves. All surveys shall be presented on a scale of 1 inch to 100 feet and a scale of 5 inches to 100 feet.

2. Gyroscopic multi-shot surveys of the borehole shall be taken at intervals not to exceed every 100 feet of drilled borehole.

3. Where practicable, caliper logging to determine borehole size for cement volume calculations shall be done before running casings.

C. Casing and Cementing. Except as specified below, the wellbore of the salt cavern shall be cased, completed, and cemented according to rules and regulations of the Office of Conservation and good petroleum industry engineering practices for wells of comparable depth that are applicable to the same locality of the salt cavern. Design considerations for casings and cementing materials and methods shall address the nature and characteristics of the subsurface environment, the nature of injected and disposed materials, the range of conditions under which the well, cavern, and facility shall be operated, and the expected life of the well including closure and post-closure.

1. Cementing shall be by the pump-and-plug method or another method approved by the Office of Conservation and shall be circulated to the surface. Circulation of cement may be done by staging.

a. For purposes of these rules and regulations, circulated (cemented) to the surface shall mean that actual cement returns to the surface were observed during the primary cementing operation. A copy of the cementing company's job summary or cementing ticket indicating returns to the surface shall be submitted as part of the pre-operating requirements of §3127.

b. If returns are lost during cementing, the owner or operator shall have the burden of showing that sufficient cement isolation is present to prevent the upward movement of injected or disposed material into zones of porosity or transmissive permeability in the overburden along the wellbore and to protect underground sources of drinking water.

2. Surface casing shall be set to a depth into a confining bed below the base of the lowermost underground source of drinking water. Surface casing shall be cemented to surface where practicable.

3. All salt cavern wells shall be cased with a minimum of two casings cemented into the salt. The surface casing shall not be considered one of the two casings of this Subparagraph.

4. New wells drilled into an existing salt cavern shall have an intermediate casing and a final cemented casing set into the salt. The final cemented casing shall be set a minimum distance of 300 feet into the salt and shall make use of a sufficient number of casing centralizers.

5. The following applies to wells existing in salt caverns before the effective date of these rules and regulations and are being converted to salt cavern waste disposal. If the design of the well or cavern precludes having distinct intermediate and final casing seats cemented into the salt, the wellbore shall be cased with two concentric casings run from the surface of the well to a minimum distance of 300 feet into the salt. The inner casing shall be cemented from its base to surface.

6. The intermediate and final casings shall be cemented from their respective casing seats to the surface when practicable.

D. Casing and Casing Seat Tests. When doing tests under this paragraph, the owner or operator shall monitor and record the tests by use of a surface readout pressure gauge and a chart or a digital recorder. All instruments shall be properly calibrated and in good working order. If there is a failure of the required tests, the owner or operator shall take necessary corrective action to obtain a passing test.

1. Casing. After cementing each casing, but before drilling out the respective casing shoe, all casings shall be hydrostatically pressure tested to verify casing integrity and the absence of leaks. For surface casing, the stabilized test pressure applied at the surface shall be a minimum of 500 pounds per square inch gauge (PSIG). The stabilized test pressure applied at the surface for all other casings shall be a minimum of 1,000 PSIG. All casing test pressures shall be maintained for one hour after stabilization. Allowable pressure loss is limited to five percent of the test pressure over the stabilized test duration.

2. Casing Seat. The casing seat and cement of intermediate and production casings shall each be hydrostatically pressure tested after drilling out the casing shoe. At least 10 feet of formation below the respective casing shoes shall be drilled before the test. The test pressure applied at the surface shall be the greater of 1,000 PSIG or 125 percent of the maximum predicted salt cavern operating pressure. The appropriate test pressure shall be maintained for one hour after pressure stabilization. Allowable pressure loss is limited to 5 percent of the test pressure over the stabilized test duration.

3. Casing or casing seat test pressures shall never exceed a pressure gradient equivalent to 0.80 PSI per foot of vertical depth at the respective casing seat or exceed the known or calculated fracture gradient of the appropriate subsurface formation. The test pressure shall never exceed the rated burst or collapse pressures of the respective casings.

E. Cased Borehole Surveys. A cement bond with variable density log (or similar cement evaluation tool) and a temperature log shall be run on all casings. The Office of Conservation may consider requests for allowances for wireline logging in large diameter casings or justifiable special conditions.

1. It shall be the duty of the well applicant, owner or operator to prove adequate cement isolation on all cemented casings. Remedial cementing shall be done before proceeding with further well construction, completion, or conversion if adequate cement isolation between the salt cavern well and other subsurface zones cannot be demonstrated.

2. A casing inspection log (or similar log) shall be run on the final cemented casing.

F. Hanging Strings. Without exception or variance to these rules and regulations, all salt cavern wells shall be completed with at least two hanging strings. One hanging string shall be for waste injection; the second hanging string shall be for displacing fluid out of the salt cavern from below the blanket material. Hanging strings shall be designed with a collapse, burst, and tensile strength rating conforming to all expected operating conditions, including flow induced vibrations. The design shall also consider the physical and chemical characteristics of fluids placed into and/or withdrawn from the salt cavern.

G. Wellhead Components and Related Connections. All wellhead components, valves, flanges, fittings, flowlines, and related connections shall be manufactured of steel. All components shall be designed with a test pressure rating of at least 125 percent of the maximum pressure that could be exerted at the surface. Selection and design criteria for components shall consider the physical and chemical characteristics of fluids placed into and/or withdrawn from the salt cavern under the specific range of operating conditions, including flow induced vibrations. The fluid withdrawal side of the wellhead (if applicable) shall be rated for the same pressure as the waste injection side. All components and related connections shall be maintained in good working order and shall be periodically inspected by the operator.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:927 (June 2003).

§3121. Operating Requirements

A. Cavern Roof

1. Without exception or variance to these rules and regulations, no salt cavern shall be used for E&P waste disposal if the salt cavern roof has grown above the top of the salt stock. The operation of an already permitted salt cavern shall cease and shall not be allowed to continue if information becomes available that shows this condition exist. The Office of Conservation may order the well and salt cavern closed according to an approved closure and post-closure plan.

2. The Office of Conservation may consider the use of a salt cavern for waste disposal if information exists that shows the salt cavern roof has grown vertically above the depth of the salt cavern well's deepest cemented casing seat. However, the salt cavern roof shall be below the top of the salt stock, the owner/operator shall meet the provisions for proving well/cavern mechanical integrity of §3129 and cavern configuration and capacity of §3131, and the owner/operator shall submit and carry out a plan for doing cavern roof monitoring. It shall be the duty of the well applicant or owner or operator to prove that operation of the salt cavern under this condition shall not endanger the environment, or the health, safety and welfare of the public.

B. Blanket Material. Before beginning waste disposal operations, a blanket material shall be placed into the salt cavern to prevent unwanted leaching of the cavern roof. The blanket material shall consist of crude oil, diesel, mineral oil, or other fluid possessing similar noncorrosive, nonsoluble, low-density properties. The blanket material shall be placed between the outermost hanging string and innermost cemented casing of the salt cavern and shall be of sufficient volume to coat the entire cavern roof. The cavern roof and level of the blanket material shall be monitored at least once every five years by running a density interface survey or using an alternative method approved by the Office of Conservation.

C. Remedial Work. No remedial work or repair work of any kind shall be done on the salt cavern well or salt cavern without prior authorization from the Office of Conservation. The provision for prior authorization shall also extend to doing mechanical integrity pressure and leak tests and sonar caliper surveys. The owner or operator or its agent shall submit a valid work permit request form (Form UIC-17 or successor). Before beginning well or cavern remedial work, the pressure in the salt cavern shall be relieved, as practicable, to zero pounds per square inch as measured at the surface.

D. Well Recompletion Casing Repair. The following applies to salt cavern wells where remedial work results from well upgrade, casing wear, or similar condition. For each paragraph below, a casing inspection log shall be done on the entire length of the innermost cemented casing in the well before doing any casing upgrade or repair. Authorization from the Office of Conservation shall be obtained before beginning any well recompletion, repair, upgrade, or closure. A salt cavern well that cannot be repaired or upgraded shall be properly closed according to §3141.

1. Liner. A liner may be used to recomplete or repair a well with severe casing damage. The liner shall be run from the well surface to the base of the innermost cemented casing. The liner shall be cemented over its entire length and shall be successfully pressure tested.

2. Casing Patch. Internal casing patches shall not be used to repair severely corroded or damaged casing. Casing patches shall only be used for repairing or covering isolated pitting, corrosion, or similar localized damage. The casing patch shall extend a minimum of 10 feet above and below the area being repaired. The entire casing shall be successfully pressure tested.

E. Multiple Well Caverns. No newly permitted well shall be drilled into a existing salt cavern until the cavern pressure has been relieved, as practicable, to zero pounds per square inch as measured at the surface.

F. Cavern Allowable Operating Pressure.

1. The maximum allowable salt cavern injection pressure shall be calculated at a depth referenced to the shallower of either the salt cavern roof or the well's deepest cemented casing seat. When measured at the surface and

calculated with respect to the appropriate reference depth, the maximum allowable salt cavern injection pressure shall never exceed a pressure gradient of 0.80 PSI per foot of vertical depth.

2. The salt cavern shall never be operated at pressures over the maximum allowable injection pressure defined above, exceed the maximum allowable pressure as may be established by permit, or exceed the rated burst or collapse pressure of all well tubulars (cemented or hanging strings) even for short periods, including pressure pulsation peaks, abnormal operating conditions, well or cavern tests.

3. The maximum injection pressure for a salt cavern shall be determined after considering the properties of all injected fluids, the physical properties of the salt stock, well and cavern design, neighboring activities within and above the salt stock, etc.

4. Shut-in pressure at the surface on the fluid withdrawal string or any annulus shall not be greater than 200 PSIG.

G. Cavern Displaced Fluid Management. The operator shall maintain a strict accounting of the fluid volume displaced from the salt cavern. Fluid displaced from a salt cavern shall be managed in a way that is protective of the environment. Such methods may include subsurface disposal via a properly permitted Class II disposal well, onsite storage for recycling as a waste carrier fluid, or any other method approved by the appropriate regulatory authority.

H. Waste Storage. Without exception or variance to these rules and regulations, all E&P wastes shall be stored in aboveground storage tanks. Storing wastes in open pits, cells, or similar earthen or open structures is strictly prohibited. Storage tanks shall be constructed of fiberglass, metal, or other similar material. All waste storage areas shall be built on concrete slabs/pads, be enclosed by retaining walls of required construction, and possess a means for the collection of spilled fluids.

I. Time Limits for Onsite Waste Storage. E&P waste accepted for disposal shall not be held in storage at the facility for more than 14 consecutive days. The Office of Conservation may grant a wavier to this requirement for extenuating circumstances only.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:928 (June 2003).

§3123. Safety

A. Emergency Action Plan. A plan outlining procedures for personnel at the facility to follow in case of an emergency shall be prepared and submitted as part of the permit application. The plan shall contain emergency contact telephone numbers, procedures and specific information for facility personnel to respond to a release, upset, incident, accident, or other site emergency. A copy of the plan shall be kept at the facility and shall be reviewed and updated as needed.

B. Controlled Site Access. All operators of salt cavern waste disposal facilities shall install and maintain a chain link fence of at least 6 feet in height around the entire facility property. All points of entry into the facility shall be through by a lockable gate system. All gates of entry shall be locked except during hours of operation.

C. Facility Identification. An identification sign shall be placed at all gated entrances to the salt cavern waste disposal facility. All lettering on the sign shall be of at least 1-inch dimensions and kept in a legible condition. The sign shall be of durable construction. Minimum information to include on the sign shall be the facility name, site address, daytime and nighttime telephone numbers, and shall be made applicable to the activity of the facility according to the following statement.

> "This facility is authorized by the Office of Conservation, Injection and Mining Division to receive, store, treat, process, and/or dispose of E&P wastes into a salt cavern by means of subsurface injection. Improper operations, spills or violations at this facility should be reported to the Office of Conservation at (225) 342-5515."

D. Personnel. Trained and competent personnel shall be on duty and stationed as appropriate at the salt cavern waste disposal facility during all hours and phases of facility operation. Facility operation includes, but shall not be limited to, periods of waste acceptance, waste offloading, waste transfer, waste transport vehicle washing, waste storage, waste treatment, waste processing, and waste injection/disposal.

E. Wellhead Protection and Identification

1. A protective barrier shall be installed and maintained around wellheads, pipings, and above ground structures that may be vulnerable to physical or accidental damage by mobile equipment or trespassers.

2. An identifying sign shall be placed at the wellhead of each salt cavern well and shall include at a minimum the operator's name, well/cavern name and number, well serial number, section-township-range, and any other information required by the Office of Conservation. The sign shall be of durable construction with all lettering kept in a legible condition.

F. Valves and Flowlines

1. All valves, flowlines, flanges, fittings, and related connections shall be manufactured of steel. All components shall be designed with a test pressure rating of at least 125 percent of the maximum pressure that could be exerted at the surface. All components and related connections shall be maintained in good working order and shall be periodically inspected by the operator.

2. All valves, flowlines for waste injection, fluid withdrawal, and any other flowlines shall be designed to prevent pressures over maximum operating pressure from being exerted on the salt cavern well and salt cavern and prevent backflow or escape of injected waste material. The fluid withdrawal side of the wellhead shall have the same pressure rating as the waste injection side.

3. All flowlines for injection and withdrawal connected to the wellhead of the salt cavern well shall be equipped with remotely operated shut-off valves and shall also have manually operated positive shut-off valves at the wellhead. All remotely operated shut-off valves shall be fail-safe and tested and inspected according to §3123.L.

G. Alarm Systems. Manual and automatically activated alarms shall be installed at all salt cavern waste disposal facilities. All alarms shall be audible and visible from any normal work location within the facility. The alarms shall always be maintained in proper working order. Automatic alarms designed to activate an audible and a visible signal shall be integrated with all pressure, flow, heat, fire, cavern overfill, leak sensors and detectors, emergency shutdown systems, or any other safety system. The circuitry shall be designed such that failure of a detector or sensor shall activate a warning.

H. Emergency Shutdown Valves. Manual and automatically actuated emergency shutdown valves shall be installed on all systems of salt cavern injection and withdrawal and any other flowline going into or out from each salt cavern wellhead. All emergency shutdown valves shall be fail-safe and shall be tested and inspected according to §3123.L.

1. Manual controls for emergency shutdown valves shall be designed for operation from a local control room, at the salt cavern well, any remote monitoring and control location, and at a location that is likely to be accessible to emergency response personnel.

2. Automatic emergency shutdown valves shall be designed to actuate on detection of abnormal pressuring of the waste injection system, abnormal increases in flow rates, responses to any heat, fire, cavern overfill, leak sensors and detectors, loss of pressure or power to the salt cavern well, salt cavern, or valves, or any abnormal operating condition.

I. Vapor Monitoring and Leak Detection. The operator shall develop a vapor monitoring and leak detection plan as required in §3125.C below to detect the presence of noxious vapors, combustible gases, or any potentially ignitable substances.

J. Gaseous Vapor Control. Where necessary, the operator shall install and maintain in good working order a system for managing the uncontrolled escape of noxious vapors, combustible gases, or any potentially ignitable substances within the salt cavern waste disposal facility. Any vapor control system shall be in use continuously during facility operation.

K. Fire Detection/Suppression. All salt cavern waste disposal facilities shall have a system or method of fire detection and fire control or suppression. Emphasis for fire detection shall be at waste transfer, waste storage, waste process areas, and any area where combustible materials or vapors might exist. The fire detection system shall be integrated into the automatic alarm and emergency shut down systems of the facility.

L. Systems Test and Inspection

1. Safety Systems Test. The operator shall function-test all critical systems of control and safety at least once every six months. This includes testing of alarms, test tripping of emergency shutdown valves ensuring their closure times are within design specifications, and ensuring the integrity of all electrical, pneumatic, and/or hydraulic circuits. Tests results shall be documented and keep onsite for inspection by an agent of the Office of Conservation.

2. Visual Facility Inspections. Visual inspections of the entire salt cavern waste disposal facility shall be conducted each day the facility is operating. At a minimum, this shall include inspections of the wellhead, flowlines, valves, waste transfer areas, waste storage areas, waste processing areas, signs, perimeter fencing, and all other areas of the facility. Problems discovered during the inspections shall be corrected timely.

M. Retaining Walls and Spill Containment

1. Retaining walls, curbs, or other spill containment systems shall be designed, built, and maintained around appropriate areas of the facility to collect, retain, and/or otherwise prevent the escape of wastes or other materials that may be released through facility upset or accidental spillage. Retaining walls shall be constructed of reinforced concrete. All retaining walls shall be built to a level that will provide sufficient capacity for holding at least 110 percent of the volume of each tank. All storage areas shall be kept free of debris, trash, or other materials that may constitute a fire hazard.

2. At a minimum, the following areas shall be protected by retaining walls and/or spill containment:

a. waste acceptance areas;

b. waste unloading and waste transfer areas;

c. waste storage areas;

d. waste transport vehicle and transport container decontamination/washout areas;

e. waste treatment and waste processing areas;

f. curbed area around the wellhead of each salt cavern well; and

g. any other areas of the facility the Office of Conservation deems necessary.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:929 (June 2003).

§3125. Monitoring Requirements

A. Pressure Gauges, Pressure Sensors, Flow Sensors

1. Pressure gauges that show pressure on the fluid injection string, fluid withdrawal string, and any annulus of the well, including the blanket material annulus, shall be installed at each wellhead. Gauges shall be designed to read in 10 PSI increments. All gauges shall be properly calibrated

and shall always be maintained in good working order. The pressure valves onto which the pressure gauges are affixed shall have 1/2 inch female fittings.

2. Pressure sensors designed to automatically close all emergency shutdown valves in response to a preset pressure (high/low) shall be installed and properly maintained for all fluid injection and fluid withdrawal strings, and blanket material annulus.

3. Flow sensors designed to automatically close all emergency shutdown valves in response to abnormal increases in cavern injection and withdrawal flow rates shall be installed and properly maintained on each salt cavern well.

B. Continuous Recording Instruments. Continuous recording instrumentation shall be installed and properly maintained for each salt cavern well. Continuous recordings may consist of circular charts, digital recordings, or similar type. Mechanical charts shall not exceed a clock period of 24-hour duration. The chart shall be selected such that its scaling is of sufficient sensitivity to record all fluctuations of pressure or any other parameter being monitored. The chart shall be scaled such that the parameter being recorded is 30 percent to 70 percent of full scale. Instruments shall be housed in weatherproof enclosures when located in areas exposed to climatic conditions. All fluid volumes shall be determined by metering or an alternate method approved by the Office of Conservation. Minimum data recorded shall include the following:

1. wellhead pressures on both the fluid injection and fluid withdrawal strings;

2. wellhead pressure on the blanket material annulus;

3. volume and flow rate of waste injected;

4. volume of fluid withdrawn;

5. salinity of injected material including the carrier fluid; and

6. density of injected material.

C. Vapor Monitoring and Leak Detection

1. Without exception or variance to these rules and regulations, the operator shall develop a monitoring plan designed to detect the presence of a buildup of noxious vapors, combustible gases, or any potentially ignitable substances in the atmosphere resulting from the storage, treatment, processing, and disposal of waste at the facility. Variations in topography, atmospheric conditions typical to the area, characteristics of the wastes, nearness of the facility to homes, schools, commercial establishments, etc. shall be considered in developing the monitoring plan. The plan shall be submitted as part of the permit application and should include provisions for the strategic placement of detection devices at various areas of the facility such as:

a. waste transfer, waste storage, and waste process areas;

b. salt cavern wellhead(s). An exception may be allowed for salt cavern wells in close proximity to each other, thus, the monitoring plan may include installation of detection devices around the perimeter of the well field; and

c. any other areas of the facility where may be appropriate.

2. All detection devices or systems identified in the monitoring plan shall include their integration into the facility s automatic alarm system. Activation of a detection device or system alarm shall cause a cessation of all waste acceptance, waste transfer, waste processing, and waste injection until the reason for the alarm activation has been determined and corrected.

D. Subsidence Monitoring. The owner or operator shall prepare and carry out a plan to monitor ground subsidence at and in the vicinity of the waste disposal cavern(s). Frequency of subsidence monitoring shall be scheduled to occur annually during the same period. A monitoring report shall be prepared and submitted to the Office of Conservation after completion of each monitoring event.

E. Wind Sock. At least one wind sock shall be installed at all salt cavern waste disposal facilities. The wind sock shall be visible from any normal work location within the facility.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:931 (June 2003).

§3127. Pre-Operating RequirementsCCompletion Report

A. The operator of a salt cavern waste disposal facility shall not accept, store, treat, process, or otherwise initiate waste disposal operations until all required information has been submitted to the Office of Conservation and the operator has received written authorization from the Office of Conservation clearly stating waste disposal operations may begin.

B. The operator shall submit a report to the Office of Conservation that describes, in detail, the work performed resulting from any approved permitted activity. A report shall include all information relating to the work and information that documents compliance with these rules and the approved permitted activity. The report shall be prepared and submitted for any approved work relating to the construction, installation and completion of the surface portion of the facility and information on the construction, conversion, or workover of the salt cavern well or salt cavern.

C. Where applicable to the approved permitted activity, information in a completion report shall include:

1. all required state reporting forms containing original signatures;

2. revisions to any operation or construction plans since approval of the permit application;

3. as-built schematics of the layout of the surface portion of the facility;

4. as-built piping and instrumentation diagram(s);

5. copies of applicable records associated with drilling, completing, working over, or converting the salt cavern well and/or salt cavern including a daily chronology of such activities;

6. revised certified location plat of the salt cavern well if the actual location of the well differs from the location plat submitted with the salt cavern well application;

7. as-built subsurface diagram of the salt cavern well and salt cavern labeled with appropriate construction, completion, or conversion information, i.e., depth and diameter of all tubulars, depths of top of cap rock and salt, and top and bottom of the cavern;

8. as-built diagram of the surface wellhead labeled with appropriate construction, completion, or conversion information, i.e., valves, gauges, and flowlines;

9. results of any core sampling and testing;

10. results of well or cavern tests such as casing and casing seat tests, well/cavern mechanical integrity pressure and leak tests;

11. copies of any wireline logging such as open hole and/or cased hole logs, cavern sonar survey;

12. any additional data documenting the work performed for the permitted activity, information requested by the Office of Conservation, or any additional reporting requirements imposed by the approved permit.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:932 (June 2003).

§3129. Well and Salt Cavern Mechanical Integrity Pressure and Leak Tests

A. The operator of the salt cavern well and cavern shall have the burden of meeting the requirements for well and cavern mechanical integrity. The Office of Conservation shall be notified in writing at least seven days before any scheduled mechanical integrity test. The test may be witnessed by Office of Conservation personnel but must be witnessed by a qualified third party.

B. Frequency of Tests. Without exception or variance to these rules and regulations, all salt cavern wells and salt caverns shall be tested for and satisfactorily prove mechanical integrity before being placed into initial waste disposal service. After the initial test for well and cavern mechanical integrity, all subsequent tests shall occur at least once every five years. Additionally, mechanical integrity testing shall be done for the following reasons regardless of test frequency:

1. after any alteration to any cemented casing or cemented liner;

2. after performing any remedial work to reestablish well or cavern integrity;

3. before suspending salt cavern waste disposal operations for reasons other than a lack of well/cavern mechanical integrity if it has been more than three years since the last mechanical integrity test;

4. before well/cavern closure; or

5. whenever the Office of Conservation believes a test is warranted.

C. Test Method

1. All mechanical integrity pressure and leak tests shall demonstrate no significant leak in the salt cavern, wellbore, casing seat, and wellhead. Test schedules and methods shall consider neighboring activities occurring at the salt dome to reduce any influences those neighboring activities may have on the salt cavern being tested.

2. Tests shall be conducted using the nitrogen-brine interface method with density interface and temperature logging. An alternative test method may be used if the alternative test can reliably demonstrate well/cavern mechanical integrity and with prior written approval from the Office of Conservation.

3. The salt cavern pressure shall be stabilized before beginning the test. Stabilization shall be reached when the rate of cavern pressure change is no more than 10 PSIG during 24 hours.

4. The stabilized test pressure applied at the surface shall be a minimum of 125 percent of the maximum cavern surface operating pressure or 500 PSIG whichever is greater. However, at no time shall the test pressure calculated with respect to the shallowest occurrence of either the cavern roof or deepest cemented casing seat and as measured at the surface exceed a pressure gradient of 0.80 PSI per foot of vertical depth. The salt cavern well or salt cavern shall never be subjected to pressures over the maximum allowable operating pressure or exceed the rated burst or collapse pressure of all well tubulars (cemented or hanging strings) even for short periods during testing.

5. A mechanical integrity pressure and leak test shall be run for at least 24 hours after cavern pressure stabilization and must be of sufficient time duration to ensure a sensitive test. All pressures shall be monitored and recorded continuously throughout the test. Continuous pressure recordings may be achieved through mechanical charts or may be recorded digitally. Mechanical charts shall not exceed a clock period of 24-hour duration. The chart shall be scaled such that the test pressure is 30 percent to 70 percent of full scale. All charts shall be selected such that its scaling is of sufficient sensitivity to record all fluctuations of pressure, temperature, or any other monitored parameter.

D. Submission of Pressure and Leak Test Results. One complete copy of the mechanical integrity pressure and leak test results shall be submitted to the Office of Conservation within 30 days of test completion. The report shall include the following minimum information:

1. current well and cavern completion data;

2. description of the test procedure including pretest preparation;

3. copies of all wireline logs performed during testing;

4. tabulation of measurements for pressure, volume, temperature, etc.;

5. interpreted test results showing all calculations including error analysis and calculated leak rates; and

6. any information the owner or operator of the salt cavern determines is relevant to explain the test procedure or results.

E. Mechanical Integrity Test Failure

1. Without exception or variance to these rules and regulations, a salt cavern well or salt cavern that fails a test for mechanical integrity shall be immediately taken out of waste disposal service. The failure shall be reported to the Office of Conservation according to the Notification Requirements of §3109.H. The owner or operator shall investigate the reason for the failure and shall take appropriate steps to return the salt cavern well or salt cavern to a full state of mechanical integrity. A salt cavern well or salt cavern is considered to have failed a test for mechanical integrity for the following reasons:

a. failure to maintain a change in test pressure of no more than 10 PSIG over a 24-hour period;

b. not maintaining nitrogen-brine interface levels according to standards applied in the salt cavern storage industry; or

c. fluids are determined to have escaped from the salt cavern well or salt cavern during waste disposal operations.

2. Written procedures for rehabilitation of the salt cavern well or salt cavern, extended salt cavern monitoring, or abandonment (closure and post-closure) of the salt cavern well or salt cavern shall be submitted to the Office of Conservation within 30 days of mechanical integrity test failure.

3. Upon reestablishment of mechanical integrity of the salt cavern well or salt cavern and before returning either to waste disposal service, a new mechanical integrity pressure and leak test shall be performed that demonstrates mechanical integrity of the salt cavern well or salt cavern. The owner or operator shall submit the new test results to the Office of Conservation for written approval before resuming waste disposal operations.

4. If a salt cavern well or salt cavern fails to demonstrate mechanical integrity and where mechanical integrity cannot be reestablished, the Office of Conservation may require the owner or operator to begin closure of the well or cavern within six months according to an approved closure and post-closure plan.

5. If a salt cavern fails mechanical integrity and where rehabilitation cannot be accomplished within six months, the Office of Conservation may waive the six-month closure requirement if the owner or operator is engaged in a salt cavern remediation study and implements an interim salt cavern monitoring plan. The owner or operator must seek written approval from the Office of Conservation before implementing a salt cavern monitoring program. The basis for the Office of Conservation's approval shall be that any waiver granted shall not endanger the environment, or the health, safety and welfare of the public. The Office of Conservation may establish a time schedule for salt cavern rehabilitation, cessation of interim salt cavern monitoring, and eventual salt cavern closure and post-closure activities.

F. Prohibition of Waste Acceptance During Mechanical Integrity Failure

1. Salt cavern waste disposal facilities with a single cavern are prohibited from accepting E&P wastes at the facility until mechanical integrity of the salt cavern well or salt cavern is documented to the satisfaction of the Office of Conservation.

2. Salt cavern waste disposal facilities with multiple salt caverns may continue accepting E&P wastes if the other cavern(s) at the facility exhibit mechanical integrity.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:932 (June 2003).

§3131. Cavern Configuration and Capacity Measurements

A. Sonar caliper surveys shall be performed on all salt caverns. With prior approval of the Office of Conservation, the operator may use another similar proven technology designed to determine cavern configuration and measure cavern capacity as a substitute for a sonar survey.

B. Frequency of Surveys. A sonar caliper survey shall be performed and submitted as part of the salt cavern waste disposal permit application. All subsequent surveys shall occur at least once every five years. Additional surveys shall be done for any of the following reasons regardless of frequency:

1. before commencing salt cavern closure operations;

2. whenever leakage into or out of the salt cavern is suspected;

3. after performing any remedial work to reestablish salt cavern well or salt cavern integrity; or

4. whenever the Office of Conservation believes a survey is warranted.

C. Submission of Survey Results. One complete copy of each survey shall be submitted to the Office of Conservation within 30 days of survey completion.

1. Survey readings shall be taken a minimum of every 10 feet of vertical depth. Sonar reports shall contain the following minimum information and presentations:

a. tabulation of incremental and total salt cavern volume for every survey reading;

b. tabulation of the salt cavern radii at various azimuths for every survey reading;

c. tabulation of the maximum salt cavern radii at various azimuths;

d. graphical plot of Cavern Depth versus Volume;

e. graphical plot of the maximum salt cavern radii;

f. vertical cross sections of the salt cavern at various azimuths drawn to an appropriate horizontal and vertical scale;

g. vertical cross section overlays comparing results of current survey and previous surveys;

h. (optional)-isometric or 3-D shade profile of the salt cavern at various azimuths and rotations.

2. The information submitted resulting from use of an approved alternative survey method to determine cavern configuration and measure cavern capacity shall be determined based on the method or type of survey.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:933 (June 2003).

§3133. Cavern Capacity Limits

A. The waste volume permitted for disposal into a salt cavern may not exceed 90 percent of the salt cavern volume measured from the sonar caliper survey submitted as part of the permit application. Upon reaching the permitted waste volume, the owner or operator shall remove the salt cavern from further waste disposal service and within seven days notify the Office of Conservation of such. Due to the potential for salt cavern enlargement resulting from disposal of undersaturated fluids, the operator may request a modification to the permit to allow for a continued waste disposal based on the findings of a new cavern capacity survey. If the Office of Conservation denies the request for permit modification, the operator shall begin preparations for salt cavern closure per approved updated closure and post-closure plan. The operator shall maintain a strict accounting of the waste volume disposed into the salt cavern, the fluid volume displaced from the salt cavern, and the salt cavern volume.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:934 (June 2003).

§3135. Inactive Caverns

A. The operator shall comply with the following minimum requirements when there has been no disposal of waste into a salt cavern for 30 consecutive days or more, regardless of the reason:

1. notify the Office of Conservation as per the requirements of §3109.H.3;

2. disconnect all flowlines for injection to the salt cavern well;

3. maintain continuous monitoring of salt cavern pressure, fluid withdrawal, and other parameters required by the permit;

4. maintain and demonstrate salt cavern well and salt cavern mechanical integrity if disposal operations were suspended for reasons other than a lack of mechanical integrity;

5. maintain compliance with financial responsibility requirements of these rules and regulations;

6. any additional requirements of the Office of Conservation to document the salt cavern well and salt cavern shall not endanger the environment, or the health, safety and welfare of the public during the period of salt cavern inactivity.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:934 (June 2003).

§3137. Monthly Operating Reports

A. The operator shall submit monthly waste receipts and operation reports to the Office of Conservation. Monthly reports are due no later than 15 days following the end of the reporting month.

B. The operator shall have the option of submitting monthly reports by any of the following methods:

1. the appropriate Office of Conservation supplied form;

2. an operator generated form of the same format and containing the same data fields as the Office of Conservation's form; or

3. electronically in a format meeting the Office of Conservation s requirements for electronic data submission.

C. Monthly reports shall contain the following minimum information:

1. name and location of the salt cavern waste disposal facility;

2. source and type of waste disposed;

3. wellhead pressures (PSIG) on all injection and withdrawal hanging strings;

4. wellhead pressure (PSIG) on the blanket material annulus;

5. density in pounds per gallon (PPG) of injected material;

6. volume in barrels (BBLS) and flow rate in barrels per minute (BPM) of injected material;

7. volume (BBLS) and disposition of all fluids withdrawn or displaced from the salt cavern;

8. chloride concentration in milligrams per liter (Mg/L) of injected materials including the carrier fluid;

9. changes in the blanket material fluid volume;

10. results of any monitoring program required by permit or compliance action;

11. summary of any test of the salt cavern well or salt cavern;

12. summary of any workover performed during the month including minor well maintenance;

13. description of any event which triggers an alarm or shutdown device and the response taken;

14. description of any event that exceeds operating parameters for annulus pressure or injection pressure as may be specified in the permit.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:934 (June 2003).

§3139. Record Retention

A. The owner or operator shall retain copies of all records, data, and information concerning the design, permitting, construction, and operation of the salt cavern well, salt cavern, and related surface facility. Records shall be retained throughout the operating life of the salt cavern waste disposal facility and for five years following conclusion of any post-closure care requirements. Records, data, and information shall include, but shall not be limited to the permit application, cementing (primary and remedial), wireline logs, drill records, casing records, casing pressure tests, well recompletion records, well/cavern mechanical integrity tests, cavern capacity and configuration surveys, surface construction, sources of wastes disposed, waste manifests, waste testing results, post-closure activities, corrective action, etc. All documents relating to any waste accepted and rejected for disposal shall be kept at the facility and shall be available for inspection by agents of the Office of Conservation at any time.

B. Should there be a change in the owner or operator of the salt cavern waste disposal facility, copies of all records identified in the previous paragraph shall be transferred to the new owner or operator. The new owner or operator shall then have the responsibility of maintaining such records.

C. The Office of Conservation may require the owner or operator to deliver the records to the Office of Conservation at the conclusion of the retention period. If so, the records shall be retained at a location designated by the Office of Conservation.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:934 (June 2003).

§3141. Closure and Post-Closure

A. Closure. The owner or operator shall close the salt cavern well, salt cavern, surface facility or parts thereof as approved by the Office of Conservation. Closure shall not begin without written authorization from the Office of Conservation.

1. Closure Plan. Plans for closure of the salt cavern well, salt cavern, and related surface facility shall be submitted as part of the permit application. The closure plan shall meet the requirements of these rules and regulations and be acceptable to the Office of Conservation. The obligation to implement the closure plan survives the termination of a permit or the cessation of salt cavern waste disposal operations or related activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. The Office of Conservation may modify a closure plan where necessary.

2. Closure Plan Requirements. The owner or operator shall review the closure plan annually to determine if the conditions for closure are still applicable to the actual conditions of the salt cavern well, salt cavern, or surface facility. Any revision to the plan shall be submitted to the Office of Conservation for approval. At a minimum, a closure plan shall address the following:

a. assurance of financial responsibility as required in §3109.B.1. All instruments of financial responsibility shall be reviewed each year before its renewal date according to the following process:

i. a detailed cost estimate for adequate closure of the entire salt cavern waste disposal facility (salt cavern well, salt cavern, surface appurtenances, etc.) shall be prepared by a qualified, independent third party and submitted to the Office of Conservation by the date specified in the permit;

ii. the closure plan and cost estimate shall include provisions for closure acceptable to the Office of Conservation and shall reflect the costs for the Office of Conservation to complete the approved closure of the facility;

iii. after reviewing the closure cost estimate, the Office of Conservation may increase, decrease or allow the amount to remain the same;

iv. documentation from the operator showing that the required financial instrument has been renewed shall be received each year by the date specified in the permit. When an operator is delinquent in submitting documentation of financial instrument renewal, the Office of Conservation shall initiate procedures to take possession of funds guaranteed by the financial instrument and suspend or revoke the operating permit. Permit suspensions shall remain in effect until renewal documentation is received and accepted by the Office of Conservation;

b. a prediction of the pressure build-up in the salt cavern following closure;

c. an analysis of potential pathways for leakage from the salt cavern, cemented casing shoe, and wellbore. Consideration shall be given to site specific elements of geology, waste characteristics, salt cavern geometry and depth, salt cavern pressure build-up over time due to salt creep and other factors inherent to the salt stock and/or salt dome;

d. procedures for determining the mechanical integrity of the salt cavern well and salt cavern before closure;

e. removal and proper disposal of any waste or other materials remaining at the facility;

f. closing, dismantling, and removing all equipment and structures located at the surface (including site restoration) if such equipment and structures will not be used for another purpose at the same disposal facility;

g. the type, number, and placement of each wellbore or salt cavern plug including the elevation of the top and bottom of each plug and the method of placement of the plugs;

h. the type, grade, and quantity of material to be used in plugging;

i. a description of the amount, size, and location (by depth) of casing and any other well construction materials to be left in the salt cavern well;

j. any proposed test or measurement to be made before or during closure.

3. Notice of Intent to Close

a. The operator shall review the closure plan before seeking authorization to begin closure activities to determine if the conditions for closure are still relevant to the actual conditions of the salt cavern well, salt cavern, or surface facility. Revisions to the method of closure reflected in the plan shall be submitted to the Office of Conservation for approval no later than the date on which the notice of closure is required to be submitted as shown in the subparagraph below.

b. The operator shall notify the Office of Conservation in writing at least 30 days before the expected closure of a salt cavern well, salt cavern, or surface facility. Notification shall be by submission of a request for a work permit. At the discretion of the Office of Conservation, a shorter notice period may be allowed.

4. Standards for Closure. The following are minimum standards for closing the salt cavern well or salt cavern. The Office of Conservation may require additional standards prior to actual closure.

a. After permanently concluding waste disposal operations into the salt cavern but before closing the salt cavern well or salt cavern, the owner or operator shall:

i. observe and accurately record the shut-in salt cavern pressures and salt cavern fluid volume for an appropriate time or a time specified by the Office of Conservation to provide information regarding the salt cavern's natural closure characteristics and any resulting pressure buildup;

ii. using actual pre-closure monitoring data, show and provide predictions that closing the salt cavern well or salt cavern as described in the closure plan will not result in any pressure buildup within the salt cavern that could adversely effect the integrity of the salt cavern well, salt cavern, or any seal of the system.

b. Before closure, the owner or operator shall do mechanical integrity pressure and leak tests to ensure the integrity of both the salt cavern well and salt cavern.

c. Before closure, the owner or operator shall remove and properly dispose of any free oil or blanket material remaining in the salt cavern well or salt cavern.

d. Upon permanent closure, the owner or operator shall plug the salt cavern well with cement in a way that will not allow the movement of fluids into or between underground sources of drinking water or outside the salt stock. Placement of cement plugs shall be accomplished by using standard petroleum industry practices for downhole well abandonment. Each plug shall be appropriately tagged and pressure tested for seal and stability before closure is completed.

e. Upon successful completion of the closure, the owner or operator shall identify the surface location of the abandoned well with a permanent marker inscribed with the operator's name, well name and number, serial number, section-township-range, date plugged and abandoned, and acknowledgment that the well and salt cavern were used for disposal of E&P waste.

5. Closure Report. The owner or operator shall submit a closure report to the Office of Conservation within 30 days after closure of the salt cavern well, salt cavern, surface facility, or part thereof. The report shall be certified as accurate by the owner or operator and by the person charged with overseeing the closure operation (if other than the owner or operator). The report shall contain the following information:

a. detailed procedures of the closure operation. Where actual closure differed from the plan previously approved, the report shall include a written statement specifying the differences between the previous plan and the actual closure;

b. all state regulatory reporting forms relating to the closure activity; and

c. any information pertinent to the closure activity including test or monitoring data.

B. Post-Closure. Plans for post-closure care of the salt cavern well, salt cavern, and related surface facility shall be submitted as part of the permit application. The post-closure plan shall meet the requirements of these rules and regulations and be acceptable to the Office of Conservation. The obligation to implement the post-closure plan survives the termination of a permit or the cessation of salt cavern waste disposal operations or related activities. The requirement to maintain and implement an approved post-closure plan is directly enforceable regardless of whether the requirement is a condition of the permit. The Office of Conservation may modify a post-closure plan where necessary.

1. The owner or operator shall review the post-closure plan annually to determine if the conditions for post-closure are still applicable to actual conditions. Any revision to the

plan shall be submitted to the Office of Conservation for approval. At a minimum, a post-closure plan shall address the following:

a. assurance of financial responsibility as required in §3109.B.1. All instruments of financial responsibility shall be reviewed each year before its renewal date according to the following process:

i. a detailed cost estimate for adequate post-closure care of the entire salt cavern waste disposal facility shall be prepared by a qualified, independent third party and submitted to the Office of Conservation by the date specified in the permit;

ii. the post-closure care plan and cost estimate shall include provisions acceptable to the Office of Conservation and shall reflect the costs for the Office of Conservation to complete the approved post-closure care of the facility;

iii. after reviewing the post-closure cost estimate, the Office of Conservation may increase, decrease or allow the amount to remain the same;

iv. documentation from the operator showing that the required financial instrument has been renewed must be received each year by the date specified in the permit. When an operator is delinquent in submitting documentation of financial instrument renewal, the Office of Conservation shall initiate procedures to take possession of the funds guaranteed by the financial instrument and suspend or revoke the operating permit. Any permit suspension shall remain in effect until renewal documentation is received and accepted by the Office of Conservation;

b. any plans for monitoring, corrective action, site remediation, site restoration, etc., as may be necessary.

2. Where necessary and as an ongoing part of post-closure care, the owner or operator shall continue the following activities:

a. complete any corrective action or site remediation resulting from the operation of a salt cavern waste disposal facility;

b. conduct any groundwater monitoring or subsidence monitoring required by the permit until pressure in the salt cavern displays a trend of behavior that can be shown to pose no threat to salt cavern integrity, underground sources of drinking water, or other natural resources of the state;

c. complete any site restoration.

3. The owner or operator shall retain all records as required in §3139 for five years following conclusion of post-closure requirements.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Natural Resources, Office of Conservation, LR 29:935 (June 2003).

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